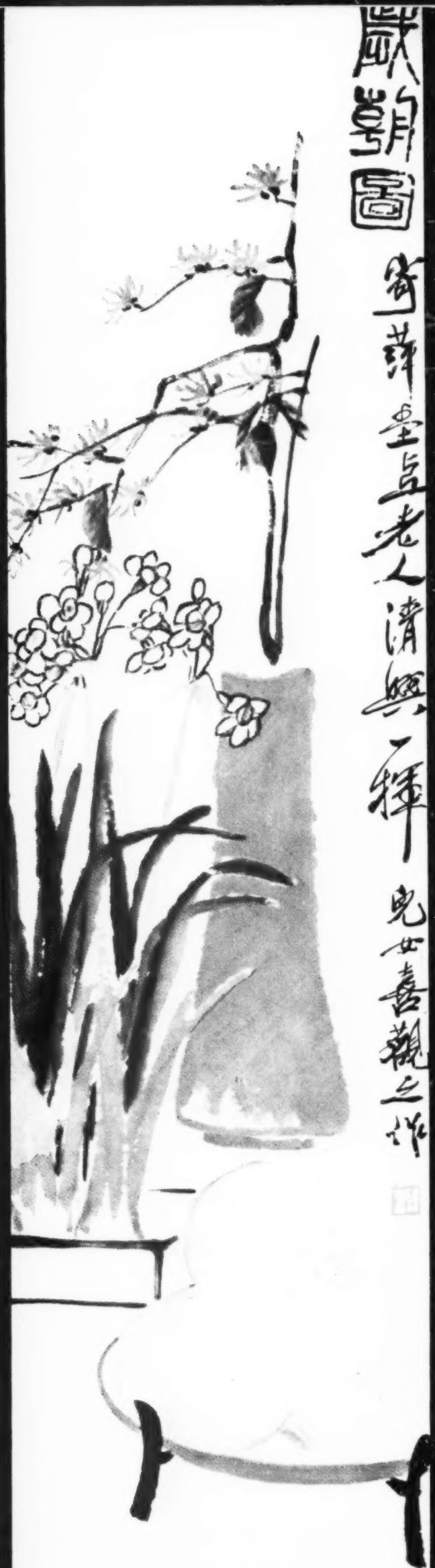


AMERICAN FABRICS

NUMBER TWENTY-SIX SUMMER 1953 FOUR DOLLARS



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American Industrial Materials





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FORSTMANN WOOLEN COMPANY
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American Fabrics

*... dedicated to the belief that Fashion begins with the Fabric ...
that the American textile industry casts a major influence on the
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it has deservedly attained the world's pinnacle from which it can never
be dislodged. This volume number twenty-six of American Fabrics,
focusing its editorial spotlight on silk and on current important
developments in textile techniques, presents, again,
a special new section devoted to industrial
fabrics and materials.*

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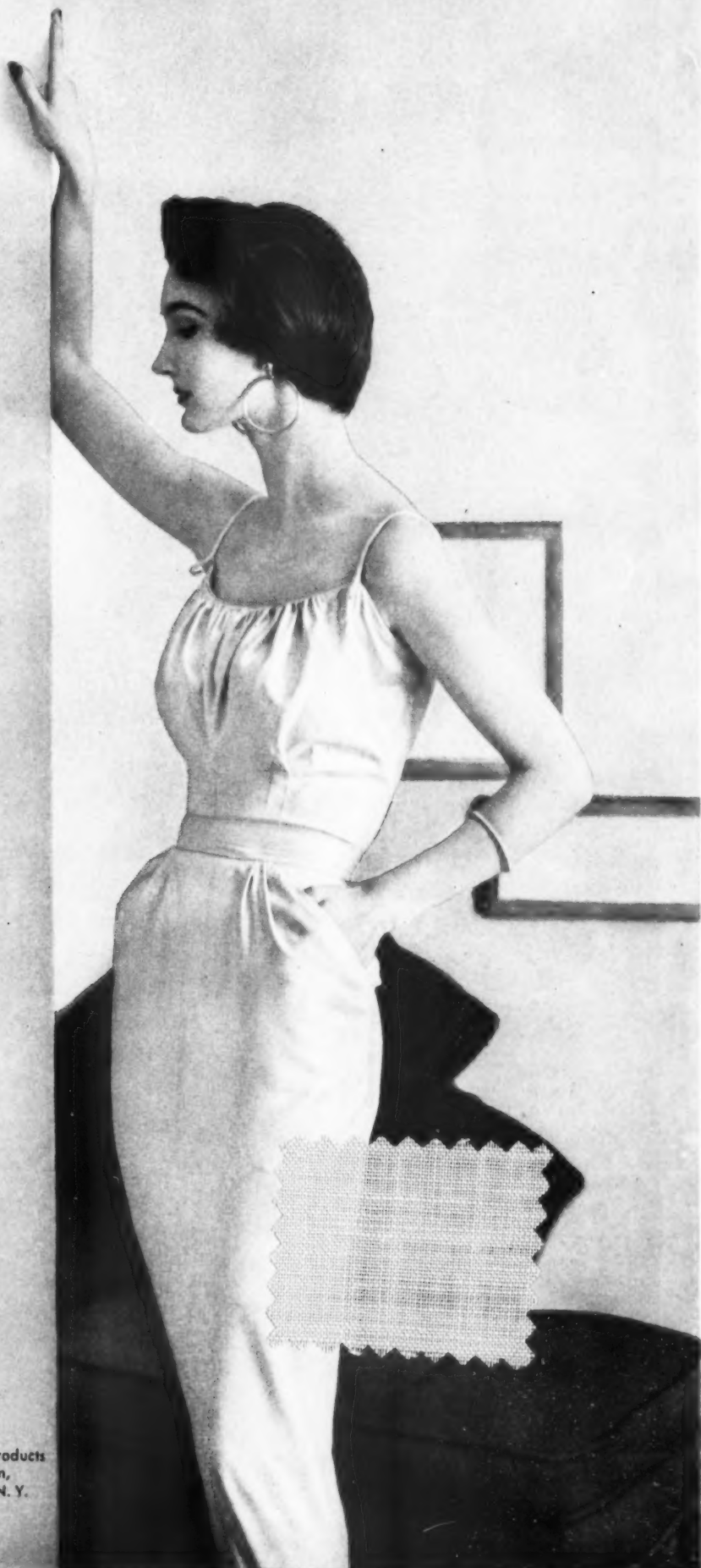
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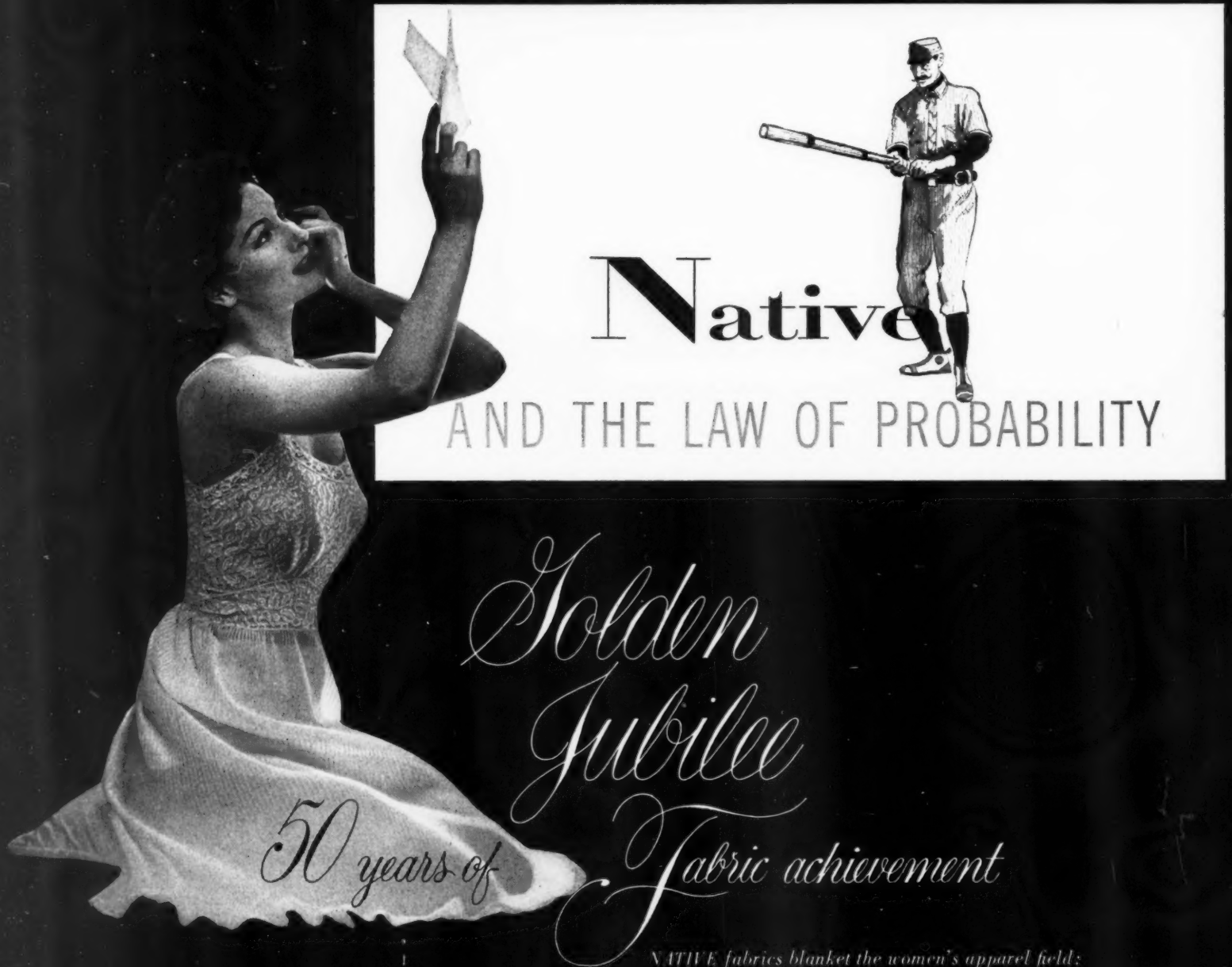
What are the chances of a player hitting a home-run every time he steps up to bat? You don't have to be a sports expert to know they're very slim. But NATIVE has contrived — for 50 long and successful years — to outwit the law of probability by hitting home-run after home-run on the fabric diamond.

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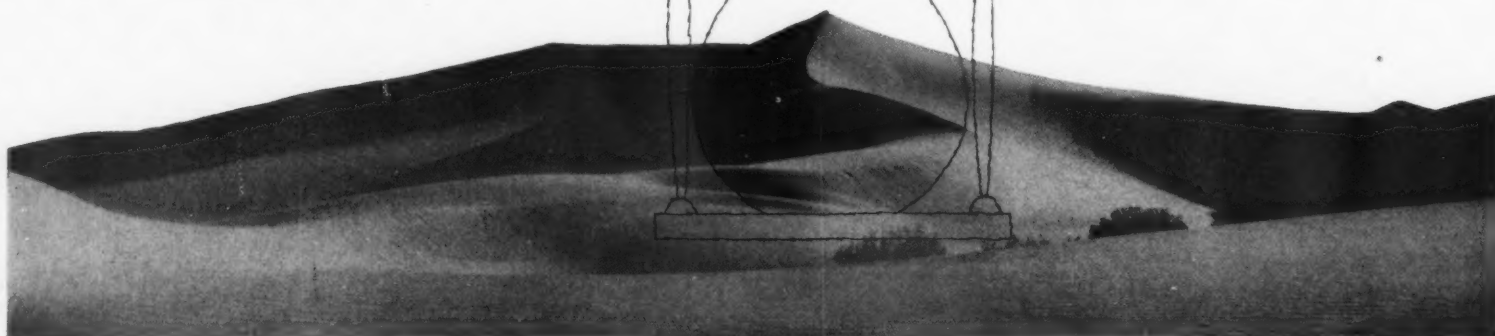
The name "BELLMANIZED" on a dress ticket or piece goods dispenses with a lot of sales talk. To countless thousands of women this is the URGE to buy and the beginning of a happy and thoroughly satisfactory shopping experience. They know that it identifies the most beautifully behaved cottons their shopping dollars can buy... Cottons that stay crisp, sheer, wiltless, without mussy starching. "Bellmanized" National ads are constantly driving these facts home to millions. What easier way can there be to sell smart cottons by yards or by garments?

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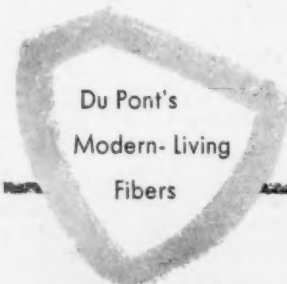
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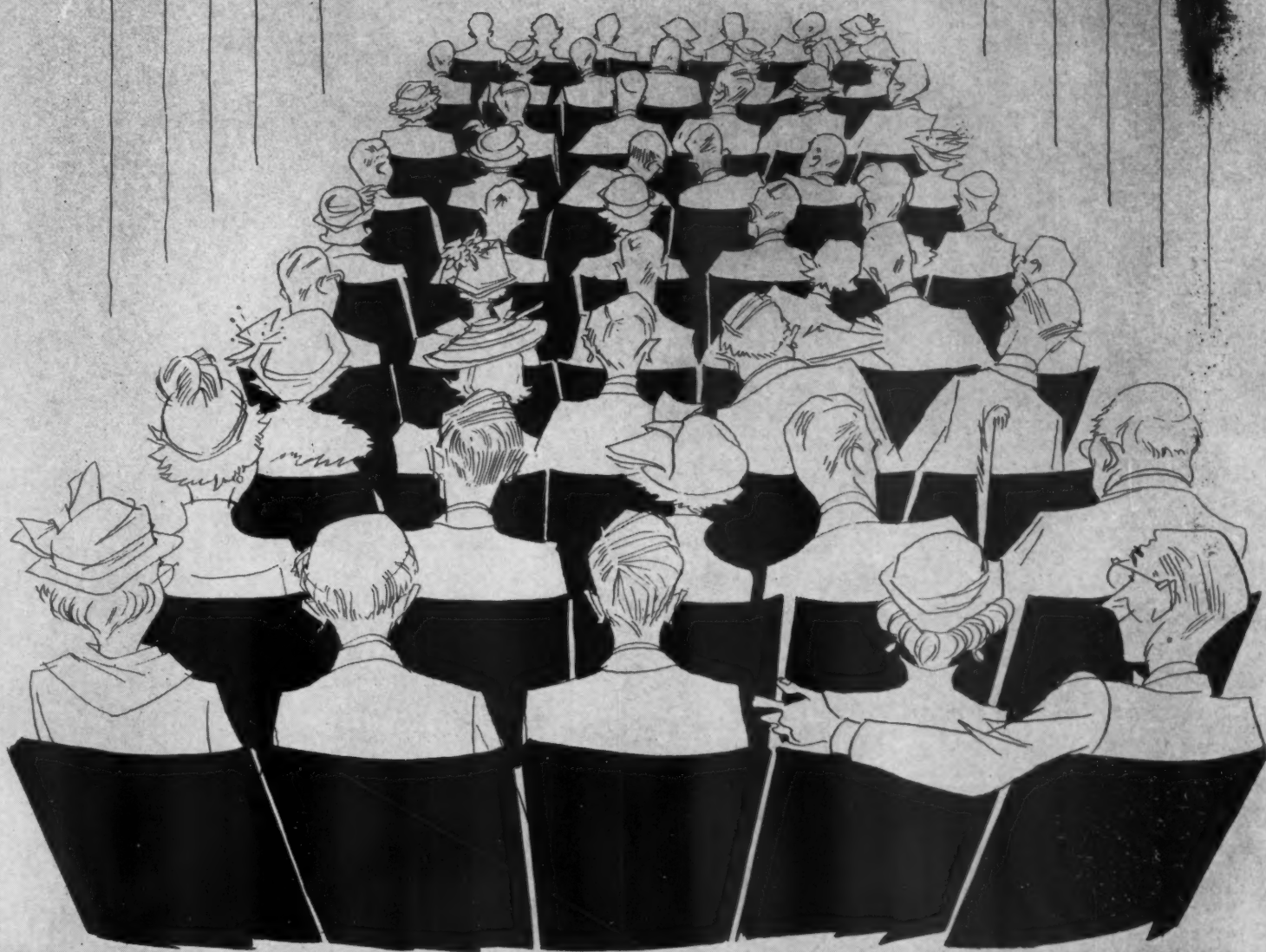
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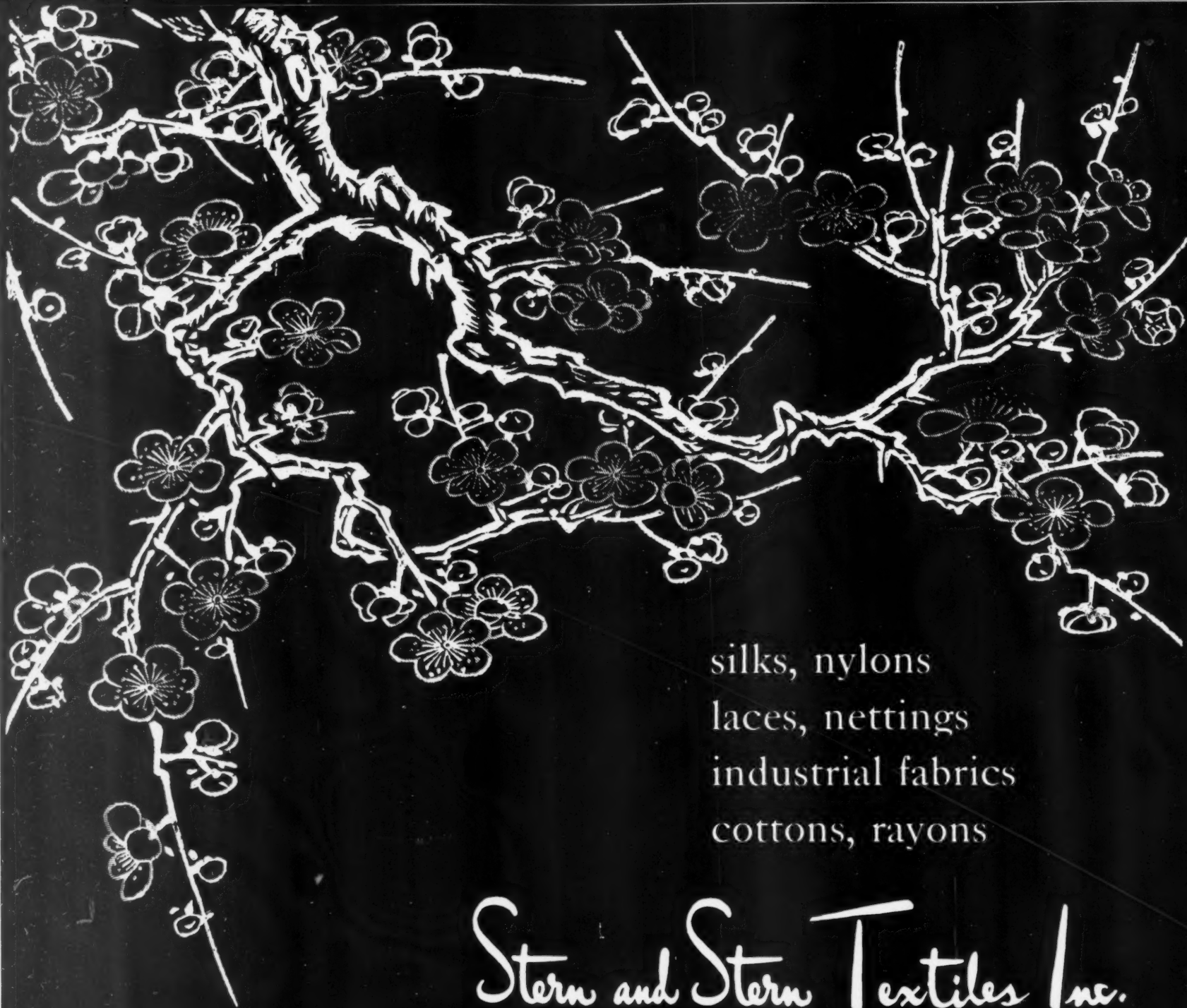
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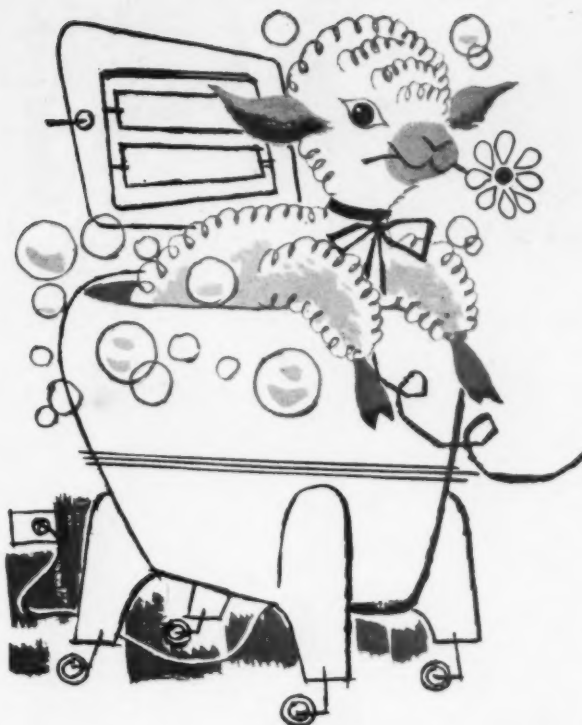
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The Lamb
In The
Washing
Machine?



CARLETON



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woolen fabrics are



This woolen fabric is really machine washable. It bears the "Sanforlan" trademark, which means that it can be washed repeatedly without loss of original fit. It is available in garments made by leading manufacturers in all fields.

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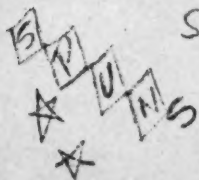
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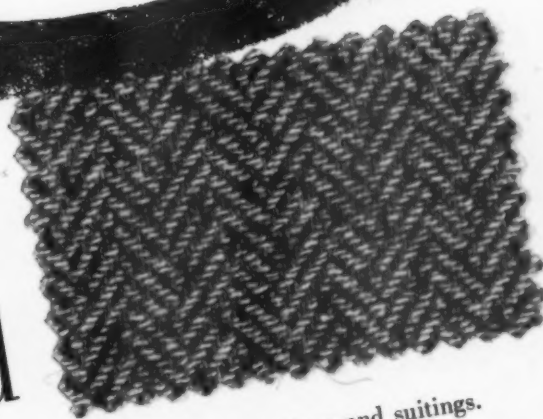
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fabric;
no longer
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linen are cool, imagine
lustrous silk blended with
cotton — with linen — for
men's suits . . . for women's

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Vest of pure silk vesting by McGregor Sportswear

Women's suit of Tussupreme by Talmack, Inc.

Blouse of pure silk vesting by Adelaar

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*fabulous new faces...practical new qualities...created
by unexpected weaves of silk with every other fiber!*

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A new, full-bodied, easy-to-tailor pure silk with all the charm of imported slubbed peasant weaves.

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One of our new surprise silk suitings with dacron added — April-October wear for men, year-round for women!

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New twists in pure silk — light, porous—the ultimate in luxury sports jacketing.

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Imagine the cool elegance of silk combined with the dry touch of fine wool and mohair!

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Men start a fashion! Pure silk prints designed for men's vests, now appropriated by alert women's wear cutters.

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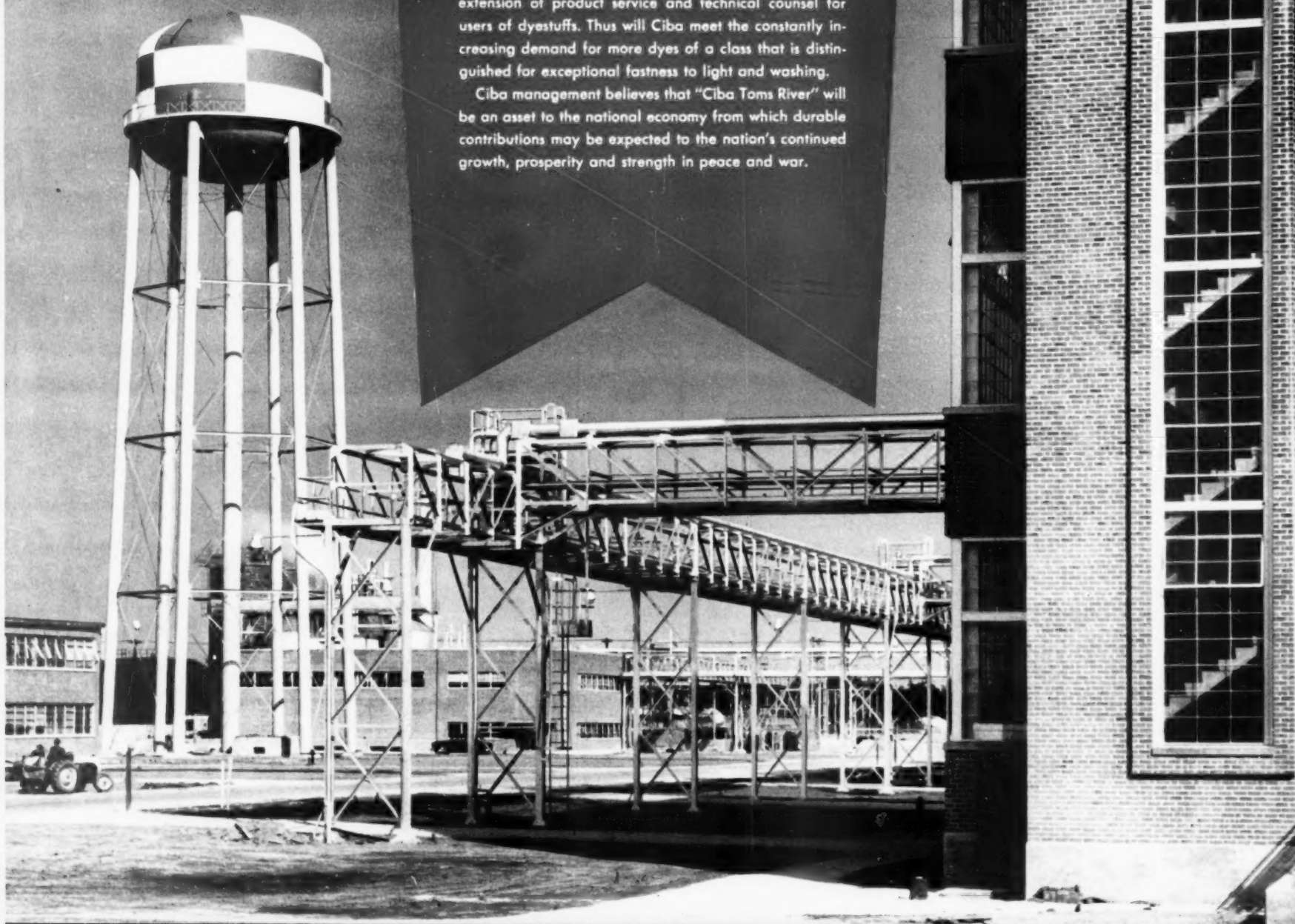
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As Ciba's headquarters for production of anthraquinone vat colors, the new Ciba Plant at Toms River, New Jersey, erected at a cost of more than \$17,000,000 and covering an area of more than 35 acres will provide a timely, major extension of product service and technical counsel for users of dyestuffs. Thus will Ciba meet the constantly increasing demand for more dyes of a class that is distinguished for exceptional fastness to light and washing.

Ciba management believes that "Ciba Toms River" will be an asset to the national economy from which durable contributions may be expected to the nation's continued growth, prosperity and strength in peace and war.



CIBA

Another Broad in Broadcloth



A pompous Roman Senator was sipping a snow frappé
When a trim Etruscan vestal let her glances stray his way.
"By Jove!" he cried, enraptured, "that tops the Latin style;
Her eyes are a subpoena that would drive a satyr wild!"
The old wolf was no tyro, for he'd served in many fields;
And saw she was no Diana and her sandals had round heels.
So he flashed a roll of talents and she flashed him back a smile,
And she shrugged her three dimensions in a manner to beguile.
While the tribunes wagered shekels that he'd be no iconoclast,
He was letting her drive the chariot and saying, "The die is cast."
They dined at the smart Lucullus, saw the Coliseum show,
Supped at the Appian Roadhouse where café patricians go.
They drank a lot of aquavit and shook a wicked hip,
And he learned the Rubicon Rumba and the Duodenum Dip.
Said he, "If you're a vestal, it's because you've had no chance—
I can see that you're ambitious, by the charming way you dance.
How'd you like to see the etchings in my villa by the bay?"
And she answered, "Tempus fugit! But don't run out of hay!"
As he gave the chariot number to the centaur at the door,
"Pax vobiscum," said the aedile, "Caveat emptor."
He gave her a three-horse chariot, took a Mediterranean Cruise,
And introduced her as his niece, who'd moved from Syracuse.
He bought her Carthaginian togas; her mink stole came from Thrace,
And her etceteras were broadcloth and were trimmed with Trojan lace.
Her hair was bound with fillets of ivory and gold,
And she sprayed her dainty tonsils with a vintage rare and old.



The centurions sneered, "Senatorial courtesy!" which but aroused his mirth;
And he shouted, "Quod erat demonstrandum, I get my money's worth."
Then he had to go to Naples where some rents were overdue;
But she lingered by the Tiber, as she claimed she had the flu.
And no great time elapsed before the censors slyly winked;
And they whispered, "Habeas corpus," as their Punic goblets clinked;
For it was gossiped at the bathhouse and told o'er games of cards
That a certain dashing shavetail of Julius Caesar's Guards
Was de facto in loco parentis, had a latchkey to the flat,
Had sequestered the ante bellum stock and the welcome on the mat.
Now the Senator in absentia was leasing out his piers
When the gossip from the Forum was wafted to his ears.
"Sartor resartus," he muttered as he paged his charioteer;
And he applied for an injunction, as he pumiced off his spear.
He broke the record back to Rome to expose her base deceits,
But the shavetail heard the chariot brakes and escaped by a rope of sheets.
The Senator surveyed his flat, which looked like Circe's bower,
And shouted "Flagrante delicto, you have just renounced your dower!"
The broad tried tears for an alibi, but he only mocked her cries;
"I gave you rings for your fingers, now they're beneath your eyes."
So she filed a general demurrer, returned to status quo;
And explained, "Semper fidelis, I thought of course you'd know:
That Cornelia came to see me, said Pompey's getting hot;
The Legion's not beyond reproach and the Navy's gone to pot;
So to stimulate recruiting, I've joined the U. S. O."



She slipped her tunic's shoulder strap, which let her strophy show.
And the aged and portly Senator bethought himself of Gaul;
And when garrisoned in Egypt how he used to pay a call
On a dusky Doric damsel with a houseboat on the Nile,
Whose lingering caresses made his Army life worth while.
His thoughts went back to Britain, and the scars upon his chin,
Where an angry Celtic husband had expressed his deep chagrin.
And he recalled how his upright figure and the polish his armor bore
Had intrigued the Iberian maidens on the Lusitania shore.
And his anger soon abating, he replaced the truant strap;
And she giggled, "Carpe diem," as he gave her -- cheek a slap;
He patted the tousled curly locks that on his shoulder lay,
And thought, "She's not hors de combat, 'tis just part of an officer's pay."

©1953, THE SPRINGS COTTON MILLS

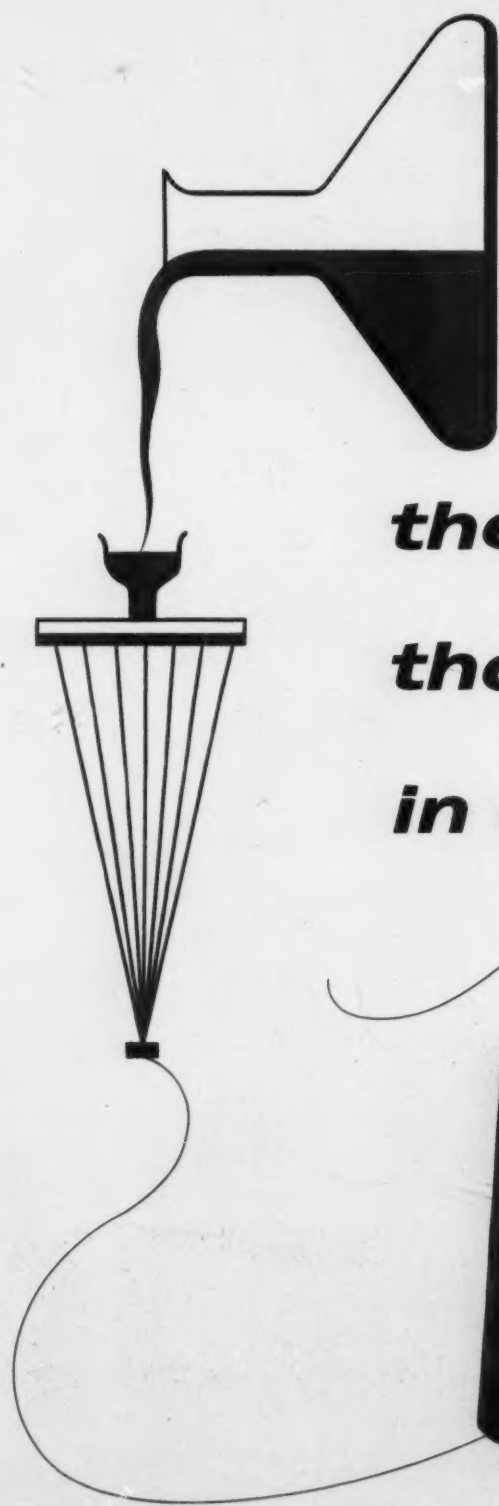
The Springs Cotton Mills Lancaster, South Carolina

Elliott White Springs is not a resort but an author. The confusion arises because SPRINGMAID sheets are known as America's Favorite Playground. You can get a copy of his latest book "Clothes Make the Man" by sending a label from a package of SPRINGMAID sheets or pillowcases and 10¢ for postage to Dept. AB24, The Springs Cotton Mills, Lancaster, S. C. Send 50¢ for the new two-year SPRINGMAID calendar, beginning with the month of May, 1953, and featuring reprints of SPRINGMAID ads.

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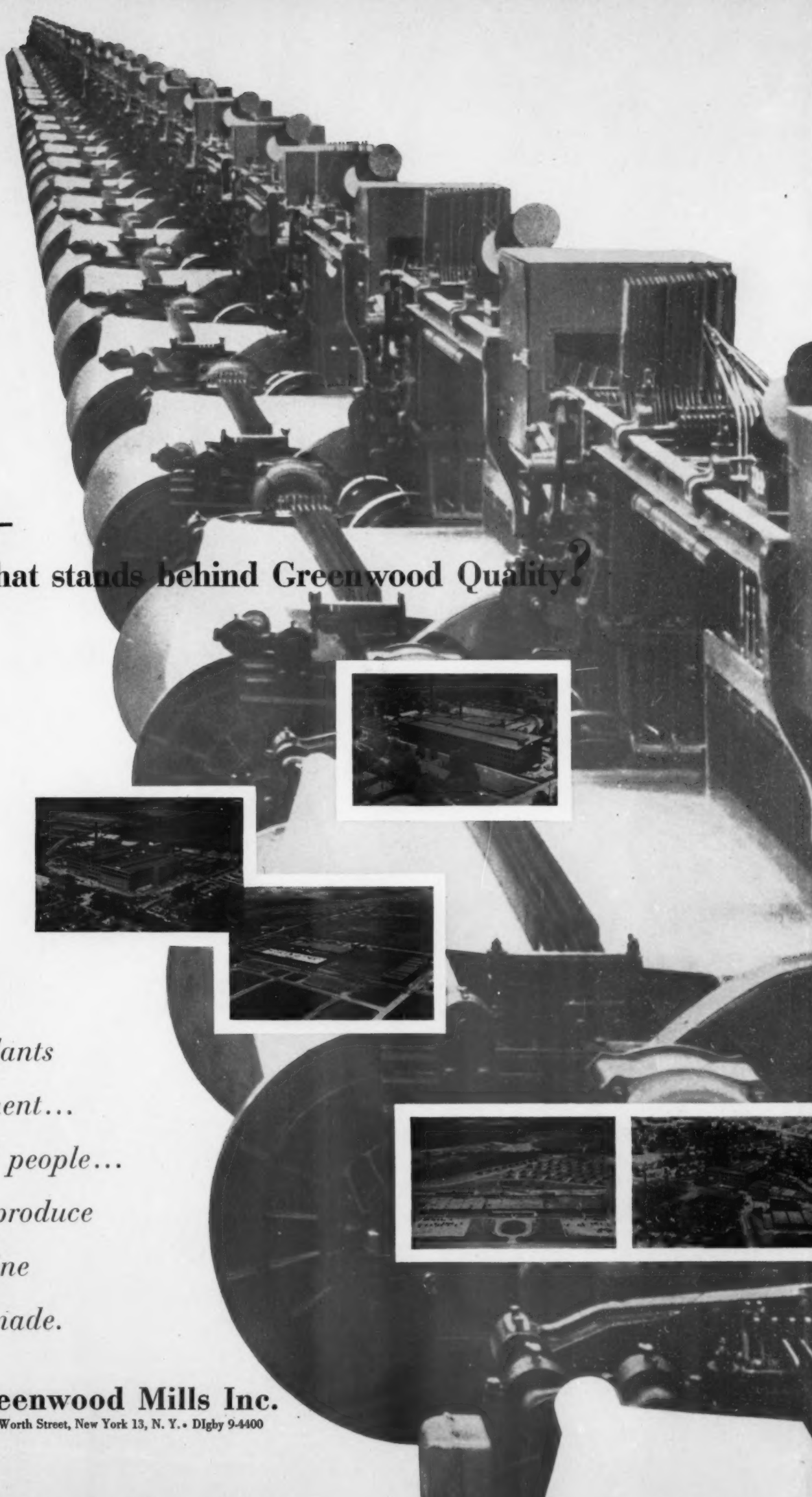
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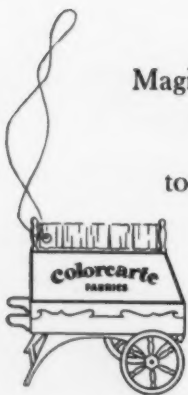
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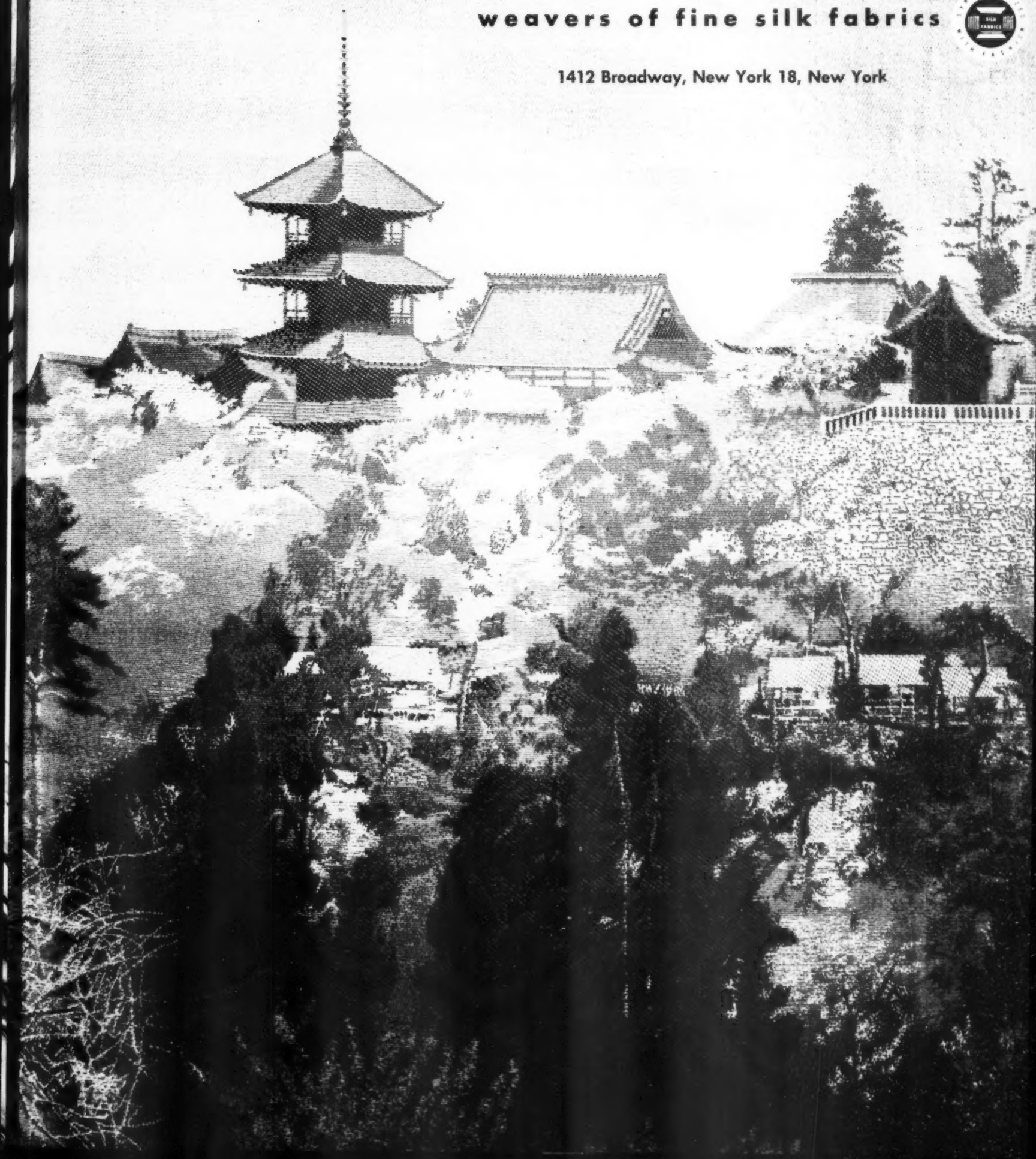
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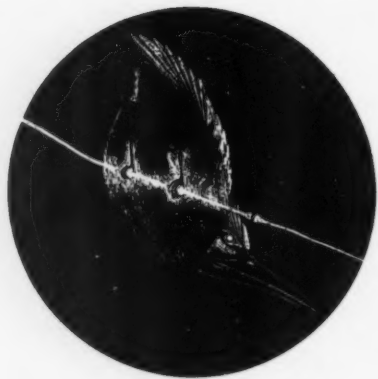
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TO REAFFIRM AND EMPHASIZE THE
IMPORTANCE OF RAYON IN ITS APPAREL,
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THE OBJECTIVES:

The Rayon Information Center has been formed to help you—the textile manufacturer, the converter, the cutter, the retailer. It will devote its great influence and resources toward widening and strengthening your present market. Toward banishing the haze and fog of consumer misunderstanding concerning modern rayon. Toward building a new and informed consumer confidence in one of the most widely used fibers in existence. Toward reaffirming the tremendous advantages this fiber has to offer, in a combination equalled by no other: beauty, economy, versatility, and durability.

THE METHODS:

The Center is launching a vast public relations program throughout the country. This program will eventually blanket not only consumers and store personnel but also schools, women's clubs, fashion editors, independent designers. Better merchandising of rayon will be stimulated by (1) special projects arranged directly through personal contact with cutters and converters to promote new fabrics and new styling and (2) through national consumer and trade advertising and editorial information.

WE BELIEVE

and hope that the Center—serving as a vital core of the rayon industries, as an exchange, as a bank of ideas and information—will give a great fiber its due. Today's rayon is dazzlingly versatile, new as the newest synthetics—and rich in uses and virtues. Let us take a fresh look—and kindle a fresh enthusiasm for the most vitally important man-made fiber on the American scene.

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THE PEOPLE WHO ARE RESPONSIBLE for DECISIONS BASED on TEXTILE KNOWLEDGE

A look into the circulation files of AMERICAN FABRICS, together with an analysis of classifications of readers.

Many of our friends have expressed agreeable surprise when they chanced to come upon American Fabrics subscribers not only in the high places of manufacturing and retailing, but in places where they did not expect to find American Fabrics. People have told us of seeing copies in the homes of heads of many of the country's greatest corporations . . . in the libraries, classrooms, and reference rooms of leading universities and training schools . . . in foreign countries on every continent. To bring to life in numbers the vibrant, vital readership and influence of American Fabrics is difficult. But the following analysis, we believe, can be useful to those who wish to get an all-over view of America's key textile publication. In presenting these figures, we have felt it necessary to present a few accompanying comments on an audience which is responsible for making the major textile buying decisions in this country.



*In the
retail field
... 6,007*

American Fabrics is read and studied by 6,007 retailers, merchandise managers, buying executives, store presidents, and training department executives in some of the finest and largest retail and department stores of America. For many of the larger stores from three to twenty yearly subscriptions are entered. A cross-section of American Fabrics subscribers in retail establishments includes: *Lord and Taylor, Saks Fifth Avenue, Neiman-Marcus, Bullock's, J. L. Hudson, L. S. Ayres, Marshall Field, Filene's, Jordan Marsh, Higbee, Wanamaker, Auerbach's, Miller and Rhodes, Halle Brothers, W. & J. Sloane, Roos Brothers, Frost Brothers, McCutcheon, Crowley Milner, Macy's, Hartzfelds, The May Company, Famous-Barr, Stix, Baer &*

Fuller, Scruggs-Vandervoort, Shillito's, Kresge, Joseph Horne, Gimbel Brothers, Frederick & Nelson, Davison-Paxon, Bonwit Teller, Hess Brothers, Lerner Stores, Rogers Peet, Brooks Brothers, Z.C.M.I., Abraham & Straus, Howard Stores, City of Paris, J. W. Robinson, I. Magnin, Eaton of Toronto, Lane Bryant, in fact every important store without exception.



*In the field
of fashion
manufacturing
... 5,480*

American Fabrics is read, studied, and guides the buying decisions of some 5,480 top manufacturers of men's, women's, and children's apparel. A cross-section of American Fabrics subscribers in fashion manufacturing includes: *Philip Mangone; Maurice Rentner; Handmacher; Jantzen; Henry Rosenfeld; Duchess Royal; Kaylon Company; Cluett Peabody; David Crystal; Baker Clothes; Printz Biederman; Wragge; Strutwear; Munsingwear; Alligator Company; Hart, Schaffner & Marx; Reliance Manufacturing Co.; Society Brand Clothes; Richmond Brothers; Wembley; Palm Beach; Hathaway Shirts; Marlboro Manufacturing; Forest City Manufacturing; John B. Stetson; Gottfried Company; Kickernick Company; Farrington Manufacturing; Adelaar Blouses; Rhea Manufacturing; Jamison; Junior House; Manhattan Shirts; Kenneth Tischler; Rosenau Brothers; Higginbotham, Bailey and Logan; Susquehanna Waist; Baumann Brothers; M. & D. Simon; Louis Tabak; Donnelly Garment Co.; Gernes Garment Co.; Lang Kohn; Justin McCarty; Nardis; Lorch; American Golfer; Ben Zuckerman; Mary Muffet; Beau Brummell; Harford Frocks; Dede Johnson; Carolyn Schnurer; Phillips-Jones; Shirtcraft; Clopay Corp.; Craig Manufacturing; Catalina; Witty Bros.; Ben Reig; A. Stein & Company.*

In addition American Fabrics has been

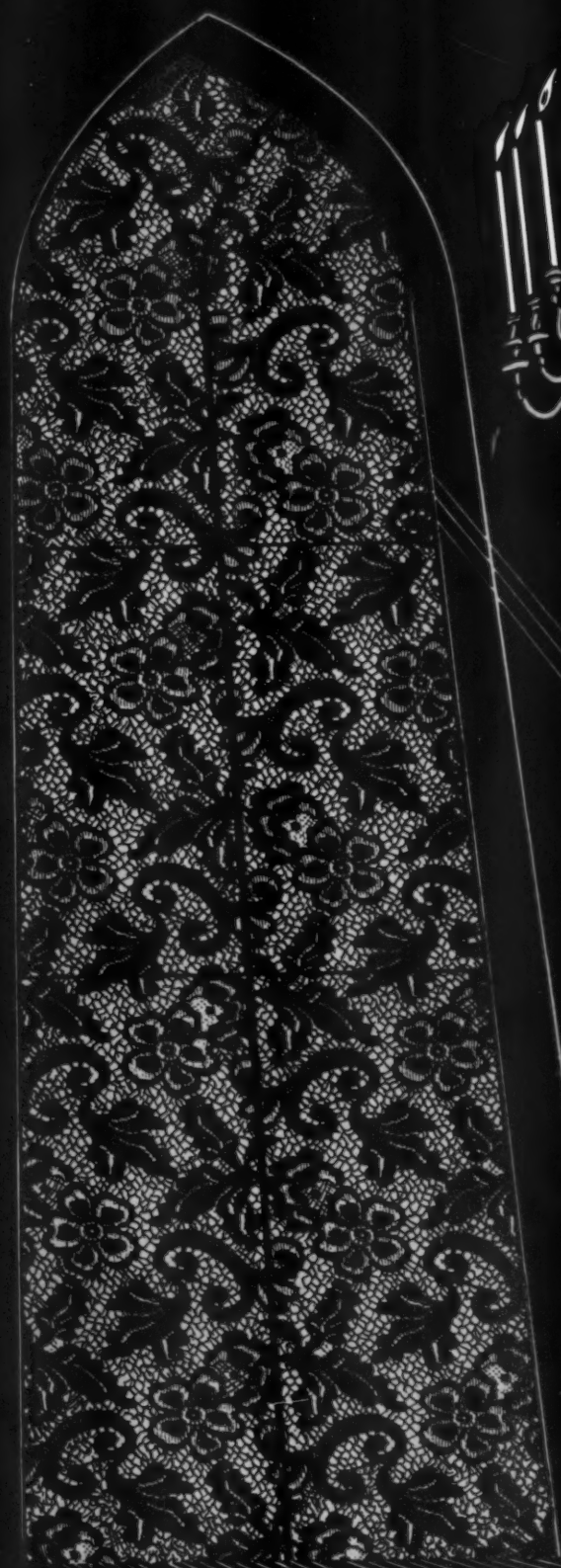
repeatedly called first choice among all publications with many top designers and decorators. The following great designing names are included among our subscribers: *Dorothy Draper, Dorothy Liebes, Carolyn Schnurer, Bonnie Cashin, Philip Mangone, Adele Simpson, Maurice Rentner, Bob Fatherly, Anne Fogarty, Pahlmann, Kiviette, Bernard Newman, Tina Leser, Claire McCordell, Alex Colman, Montesano, Jo Copeland, Hannah Troy, Howard Greer, Larry Aldrich, Sophie of Saks Fifth Avenue, Brigrance, Clare Potter.*



*In the field
of industry,
... 2,221*

American Fabrics is read, studied, and guides the textile decisions of executives in 2,221 major companies, including: *American Radiator Corp., Grace Lines, U. S. Steamship Lines, General Motors, Chrysler Motors, Ford Motor Car Co., Studebaker, Kaiser-Fraser, Cessna Aircraft, Radio Corporation of America, Weirton Steel, Bostonian Shoes, Stewart-Warner Corp., Carborundum Co., Chesapeake & Ohio Railway Co., Esso Standard Oil Co., Armstrong Cork Co., General Shoe Corp., B. F. Goodrich Co., U. S. Steel Corp., Dunlap Tire & Rubber Corp., General Tire Co., Glenn L. Martin Co., Bendix Aviation, Grumman Aircraft Corp., Eastern Airlines, The Pullman Co., Fairchild Aircraft, White Motor Co., Briggs Manufacturing Co. . . . and, of course, American Fabrics is subscribed to and helps to mould the thinking of executives in major textile organizations all over the country.*

****We tell you the foregoing because American Fabrics is interested in and does continually seek new subscribers who can make use of the material and information presented in each number. Subscription price \$12 per year, \$20 for two years. Write to Circulation Manager, American Fabrics, Empire State Bldg., New York 1.*



I^{*}nspiring...



*Laces by
Ametex*

American Textile Co., Inc., 25 EAST 31st ST., N. Y. 16, N. Y. • MILLS, PAWTUCKET, R. I.



American Restoration

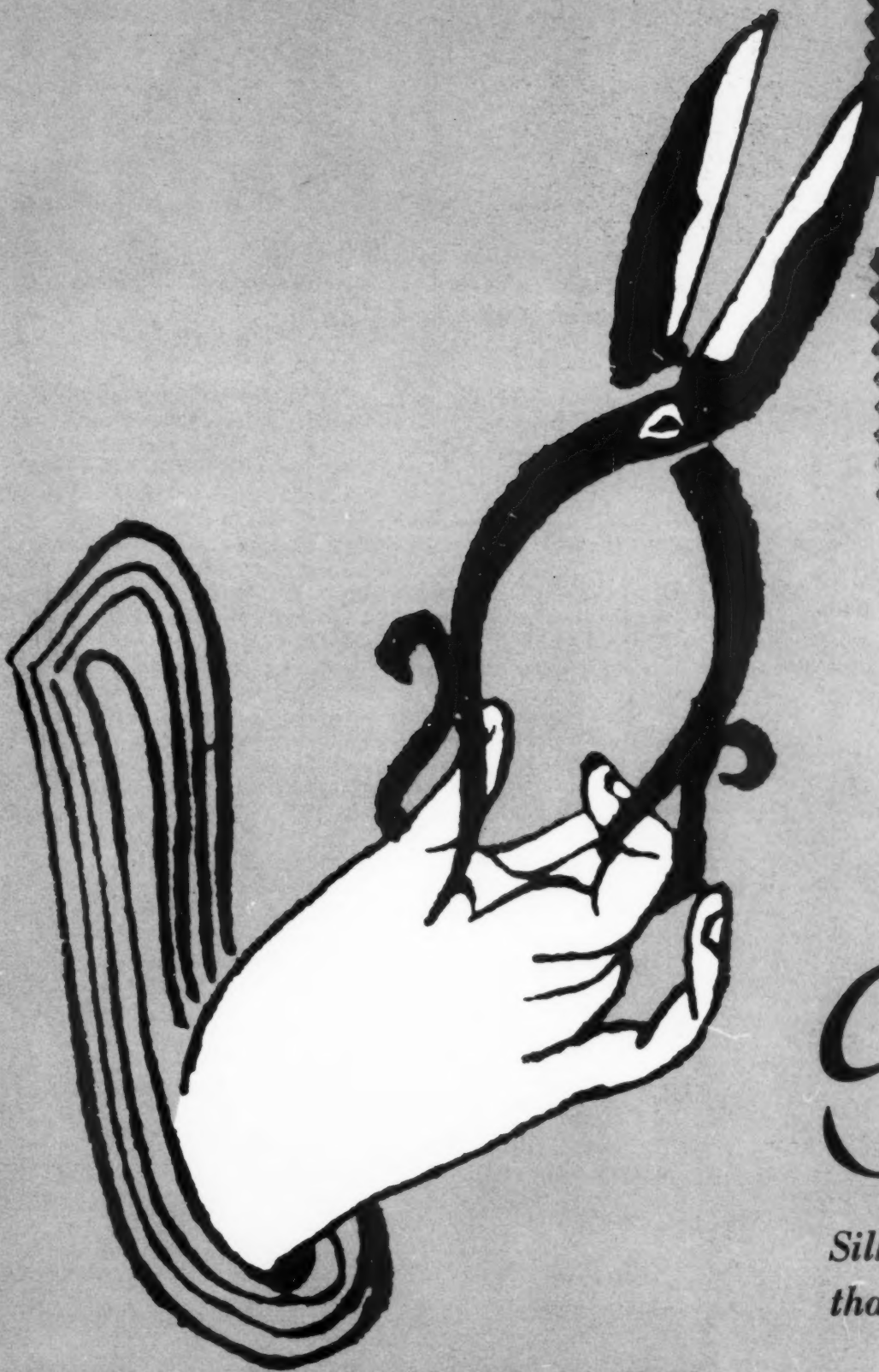
Twenty years of continuous research and study with Colonial Dames, Daughters of the American Revolution, and different committees for American Historical Homes have given us the opportunity, not only to reproduce from original documents presented to us from time to time, but also to use our own source of Scalamandré Museum of Textiles. ☆

A trip through Virginia and New York State to visit such national shrines as The Thomas Jefferson Memorial, Colonial Williamsburg, Kenmore, the Schuyler Mansion and the Jumel Mansion, will give decorators and students in the textile field the benefit of our research and experience. ☆

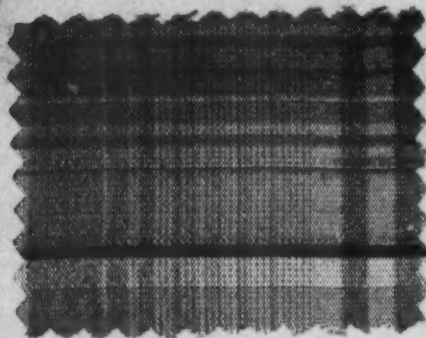
We hope to continue this kind of work as our contribution to American progress.

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An all-silk ottoman with cotton filling in the ribbing, for jackets, coats and separates.
BY GOODMAN AND THEISE



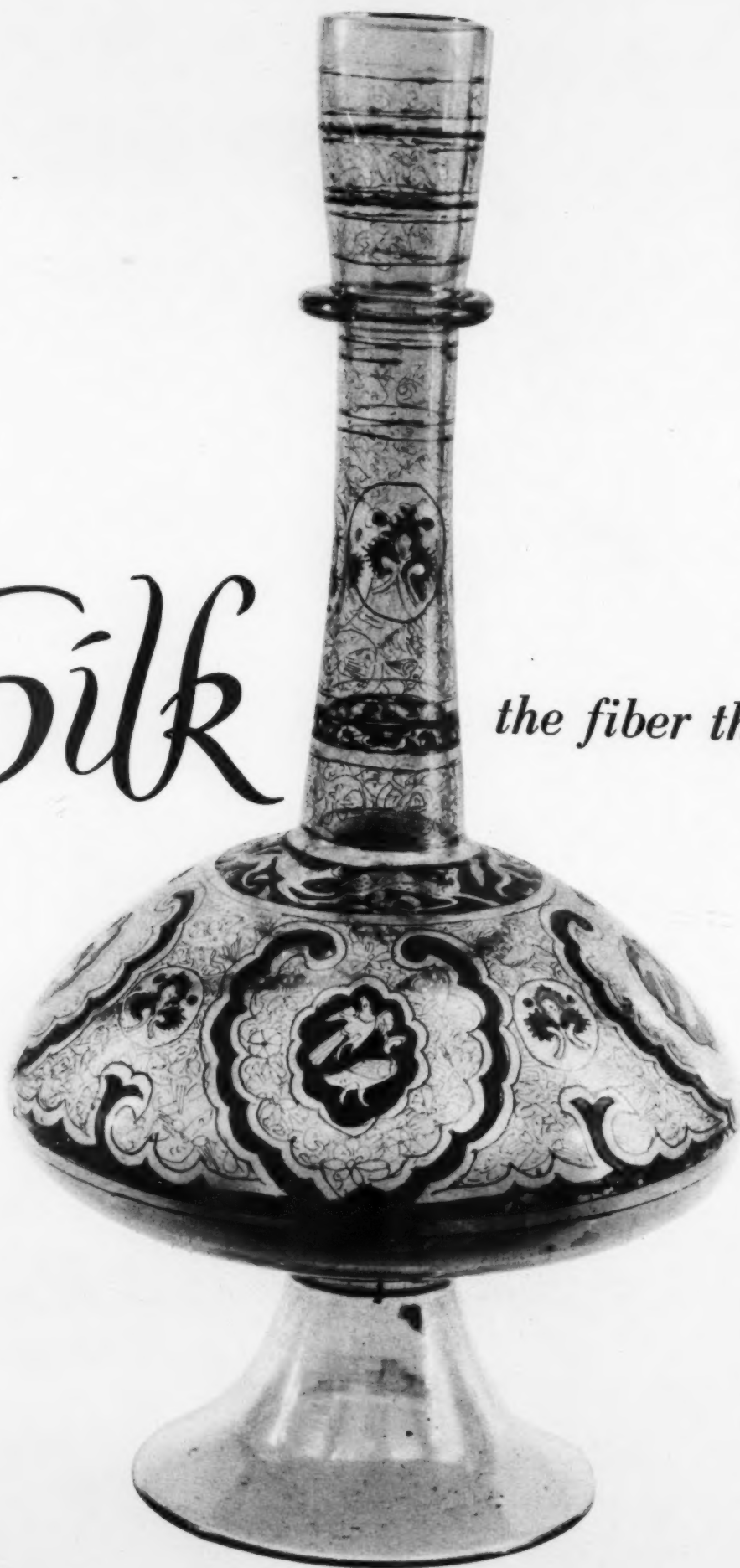
For the decorator, a yarn-dyed, all-silk antique gauze in a gay shadow-plaid pattern.
By SHULMAN-ABBASH

Silk

*Silk... the quality fiber
that delivers the goods*

Silk

the fiber that delivers the goods





THE REDISCOVERY OF THE OBVIOUS is often the quickest way to cut through to the heart of a problem. This is particularly true of the far-flung world of textiles, where the obvious is often obscured by the welter of words used to publicize a bewildering array of fibers, fabrics, and finishes.

Right now silk is in process of being rediscovered by a substantial segment of the consuming public. More and more people are beginning to realize that silk can be depended on to deliver the goods — to perform up to highest expectations. Some long hidden facts about the character of this doughty aristocrat of textiles have been coming to light during the last two years, and the repercussions of these revelations are being felt in the farthest corners of the various textile markets.

First, people are rediscovering the fact that the elegance and lavishness of silk tend to conceal its excellent wearing qualities and easy cleanability. This is particularly important in drapery and upholstery applications, where high labor costs amply justify a more expensive fabric with superior service qualities and long lasting beauty.

Decorators likewise point to the combined economic and decorative advantages of custom-dyed colors, which can be obtained when you work with silk but are not practical with other fabrics in view of production conditions governing them.

Perhaps the most sensational chapter is the rediscovery of silk for men's summer suits. There are those who claim it outper-

forms any other fiber in this capacity. And now the shantung weaves of last summer are being diversified to include other important suiting types. Best of all, prices are getting down as low as \$75.

In the case of women's apparel, the story is too well-known to call for much retelling. Whenever a couturier designs a dress with a certain degree of opulence, he inevitably thinks of silk. It is the natural medium for weaving such fabrics as peau de soie, the finer taffetas, brocades. In short, silk yarns have an irresistible affinity for the finer finished fabrics.

Yet the eternal thread of economics runs through the very highest styles, thanks to the fact that silk insists upon remaining a utility fiber even in its most rarefied forms. In less expensive silk fabrics, there is solid expectation of further economic stabilization when the Government makes available for civilian use the bourette silk now monopolized for defense purposes.

The great danger lies at the lowest level. No fiber appears to worse advantage than silk when unconscionably weighted or otherwise debased; no fiber promises more or delivers less when cheapened below par. Let us hope we do not rediscover the cut-throat competition of yesterday's markets.

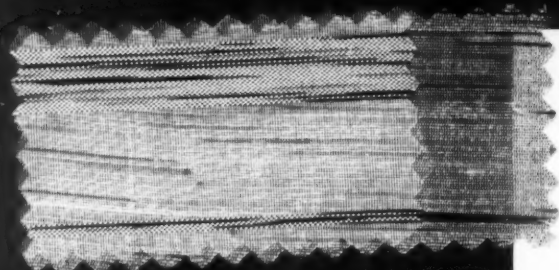
For right now silk and its devotees have every reason to aspire to great things. As more and more people engage in the rediscovery of this fascinating fiber, the entire fabric picture in the United States will brighten.

(please turn)

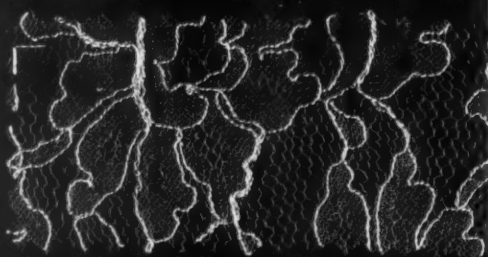




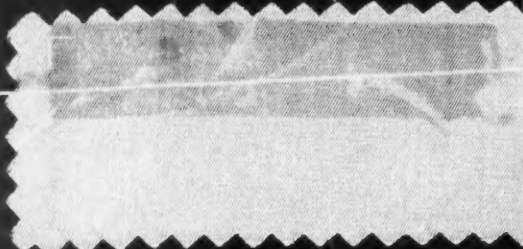
Intricate, yarn-dyed, raised faille woven with silk and Bemberg rayon.
By TULLER FABRICS



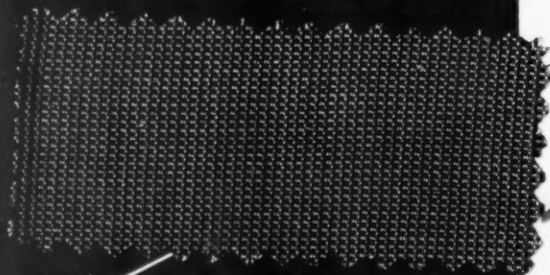
Coordinated antique taffetas, one solid and one with yarn-dyed stripe.
By STERN AND STERN



A silk all over lace for cocktail dresses and, potentially, for street wear.
By ASSOCIATED LACE



An all-silk taffeta peau de soie, a currently accepted formal wear fabric.
By SYNTEX MILLS



An all-silk suiting for both men's and women's wear. By BIANCHINI-FERIER

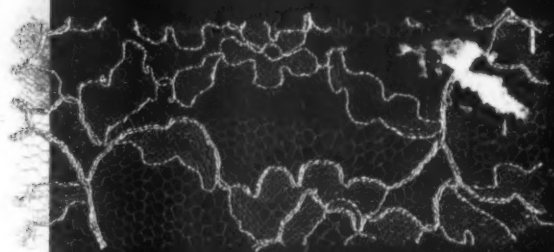


Superb silks from America's 3rd

An all-silk, yarn-dyed velvet such as is an accepted part of the formal fashion picture. By MARTIN FABRICS



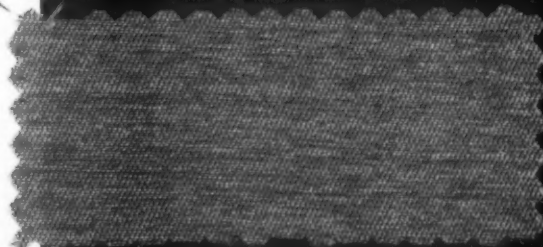
An all-silk barathea for evening wear in currently favored magnolia shade. By MARCHE SILKS



Silk all over lace for use in bridal attendants' dresses and evening wear. By LIBERTY FABRICS



A charming Coronation print in an all-silk fabric for dresses and blouses. By AMERICAN SILK MILLS



A yarn-dyed silk and worsted dress and suiting fabric. By ELGIN

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SILK TERMS

for fashion

and

sales personnel

BAMBOO SILK: Shantung-type silk fabric with more regularly spaced slubbing and a crisper hand than shantung.

BARATHEA: Plain or twill weave silk, of heavy texture and subdued luster, which has a granular effect because of the short broken ribs in the filling. Made of high quality stock.

BENGALINE: Poplin or rib-effect fabric, first made in Bengal, India. The texture is high, and the use of a coarse filling gives a pronounced corded effect. Cut to ribbon width, is classed as grosgrain.

BLONDE: Silk lace made with varying sizes of yarn. Floral designs are used in this lustrous lace which comes in colors, black, and white. The original name for blonde lace was Nanking, the city in China where the natural, unbleached silk was raised.

BOURETTE SILK: Made from silk manufacturing waste. The yarn is coarse and irregular. Bourette fibers are short, and because of this fact, and their good felting properties, find use in novelty cloths, suitings, curtains, and decorative fabrics. The yarn is spun from nubs, noil, and silk waste of many sorts which give a fancy effect with brilliant spots of color.



CHARMEUSE: Dress silk made on an eight-end satin weave. The fabric is soft of hand, drapes well, and is a favored material for evening wear.

CHIFFON: Plain weave, lightweight, sheer silk made with fine, highly twisted yarns. Is very durable despite its light weight.

CHIFFON TAFFETA: Good quality, lightweight taffeta, soft in feel and lustrous in finished appearance. Used for evening clothes.

CHIFFON VELVET: Similar to woolen broadcloth, but lighter in weight, this fabric is made of silk or rayon in a clear pile. Drapes well, is durable, and has smooth feel and excellent finish.

CHIFFONETTE: The sheerest of all chiffon weaves.

CHINA SILK: Very soft, lightweight silk made in plain weave and used chiefly for linings. Irregularities of threads, caused by the extreme lightness and softness of China silk, are characteristic of the fabric.

CIRE: Fabric which is given a wax treatment to achieve a smooth, lustrous effect and feel.

CRAVAT SILK: Heavy, smooth silk fabric, like that used for neckties.

CREPE: From the French, meaning *curled* or *crinkled*. Crepe is effected by a definite high twist in the warp or filling, or both; for example, georgette crepe has crepe twist in the warp and filling, crepe de chine only in the warp. Some silk and rayon crepes are: crepe de chine, georgette crepe, charmeuse crepe, crinkled crepe, canton crepe, crepe satin.

CREPE CHARMEUSE: A rich filling, dull luster, piece-dyed silk that has glove-like smoothness. The filling is of crepe-twist yarn.

CREPE DE CHINE: A plain woven cloth, which is soft and more or less lustrous. This fair-to-excellent quality staple is dyed or printed. Easy to manipulate, it launders well and gives good wear.

CREPON: Of the crepe group of silks, but more rugged than the average crepe. The effect is obtained by using yarns with varying twists.



DOUBLE ORGANZA: Semi-sheer silk woven in two layers to create a moiré pattern.

DOUBLE-FACED SATIN: Two sets of warp yarn and one system of filling are used to make this cloth, which presents a satin face on both sides.

DOUPPIONI: Silk thread made from two cocoons that have nested together. In spinning, the double thread is not separated. The yarn is uneven and large in diameter.

DUVETYN DE SOIE: Smooth, downy, rather heavy fabric made usually from spun silk, and napped to simulate plush.

EMBROIDERY SILK: A type of embroidery thread in which a group of single, untwisted, or loosely twisted silk yarns are plied with slight twisting to give the thread enough body for manipulation.

FAILLE: Finely ribbed silk with a high gloss. Belongs to the grosgrain family.

FAILLE TAFFETA: Stiff and crisp silk fabric with a fine cross rib.

FLAT CREPE: Silk fabric with smooth and flat surface due to the manner of twisting the crepe yarn. It is heavier and smoother than crepe de chine.

FLORENTINE: Heavy silk fabric, figured or plain twilled in weave, used chiefly for waistcoats.

FOULARD: Lightweight, soft, glossy silk with a pronounced diagonal twill rib, thicker than that of surah. Originally made for the men's handkerchief trade, it is now used for neckwear, dresses, and linings.

GEORGETTE CREPE: Plain or crepe weave silk fabric. This rugged, lightweight fabric has stiffness and body, and gives excellent wear because of its durable construction.

GLORIA: Closely woven, lightweight fabric used for umbrella coverings. Usually made with silk warp and cotton or worsted filling.

GOSSAMER: Very soft silk of the veiling variety with a gauze effect. Used for brides' veilings.

GRENADINE: Open-work, gauze-like cloth of silk, either plain or figured in design, which has a rather stiff finish.

GROSRAIN: Heavy, rather prominent ribbed fabric that is rugged and durable. Grosgrain is often referred to as bengaline cut to ribbon width.



HONAN: Silk pongee cloth made from wild silkworms raised in the Honan area in China. The fabric is noted for its uniformity of color since the fiber is the only wild type that gives even dyeing results.

ILLUSION: A fine, all-silk tulle. Its cobweb appearance makes the fabric ideal for fine veilings.

INDIA SILK: Hand-loomed, plain weave fabric, thin in texture and soft in feel.

IRIDESCENT SILK ORGANDY: Sheer, crisp silk, with

yarns of one color running lengthwise and of another color running crosswise, thereby producing a glowing effect.

ITALIAN SILK: Very high quality raw silk which has excellent cohesion, good strength and elasticity, is easily prepared, and is free from imperfections. In addition to its use for dress goods, Italian silk is used in the knitting trade for high grade hosiery, underwear, and glove silk.



JACQUARD: Method of weaving invented by Joseph Marie Jacquard of Lyons, France, in the 19th Century. Jacquard weaving produces elaborate weaves in the loom by the substitution of a set of perforated strips of cardboard punched according to intricate design, for the ordinary and restricted number of heddle frames and pattern chains. The Jacquard motion revolutionized the weaving industry, and plays a prominent part in modern tapestry, brocade, damask, and figured dress goods production.

JAPANESE SILK: Referring to yarn, it is silk raised in Japan, the leading silk producing country of the world. Referring to fabric, it is a plain weave cloth woven in Japanese mills, with the warp and filling identical in every detail. It has good luster, soft feel, and is dyed in plain colors. Pongee and shantung are typical of the weaves.

LAME: Silk brocade woven fabric in which metallic threads are used in the warp or the filling for decorative purposes.

LOUSY SILK: Refers to a fabric with small specks of a detrimental nature on the face of the fabric. They are caused in manipulation of the silk from the raw state to the finished cloth.

LYONS VELVET: The best quality of millinery velvet, from Lyons, France. The fabric is soft and thick in texture and features a deep silk pile.



MARQUINETTE: A gauze fabric, light in weight, which comes in white, solid colors, and novelty finishes. Used for curtains and dresses.

MESSALINE: A satin weave silk fabric which is lustrous, soft, and dressy. It is a dressgoods fabric, usually dyed in solid shades.

MOIRE: Cloth which is given a water-marked effect in the finished fabric. Taffeta may be used, but usually a ribbed type of silk cloth, like poplin, is finished in this way.

MOUSSELINE DE SOIE: Silk muslin on the order of chiffon, with a crisp, firm finish.

NANKEEN: Also known as shantung, or rajah, this plain weave cloth is made from tussah silk and affords good wear. It is similar to pongee, with the yarn irregular in the cloth.

NEEDLEPOINT SILK: A heavy silk fabric with a regular, even weave like hand-made needlepoint.

NING HEI: Suiting-weight silk with textured, homespun appearance.

NUN'S VEILING: Fine, sheer material with a marked sheen. It is used for veiling by nuns, and in colors for dressgoods, and baby clothes.

ORGANDY: In silk this is a light, transparent fabric

on the order of cotton organdy. Its characteristics are stiff, hard finish and watered or moiré effect.

ORGANZA: Diaphanous, crisp silk fabric made with douppioni yarns to produce a slubbed effect.

OTTOMAN: Heavy type of silk fabric that has wide, flat ribs made of silk, cotton, or worsted filling. The ottoman weave is a diagonal rib effect made from a steep twill weave.

PANNE: A satin-faced velvet or silk material which has high luster made possible by pressure under rollers. Panne velvet is often referred to as panne and is a staple silk material.

PEAU D'ANGE: Smooth, high texture finish given to some silk fabrics of crepe or satin. Fabrics with this finish are used largely for evening and wedding gowns.

PESANTE SILK: Textured suiting-weight fabric, popular for both men's and women's suits.

PONGEE: This soft, unbleached washable silk, tan or ecru in color, is woven from cocoons of wild silk worms. It is a light or medium weight Chinese silk with irregular ridges in texture.

PURE-DYED SILK: Silk fabric weighted with not more than ten percent weighting. In the case of black fabric, with not more than fifteen percent.



RAW SILK: Silk from the cultivated silkworm, before the gum or sericin has been removed.

SATIN: Cloth made in a satin weave brings one system of threads to the face for the greater part of the time, whereas the other system of yarn shows on the back of the cloth, in an almost solid effect. Brilliancy and compactness of color are characteristic of satin fabrics.

There is an almost endless group of satin cloths available today. They all have points of resemblance, but a slight difference may serve to give one a distinctive name and use.

SATIN BACK: A reversible cloth, fabric, or garment with a back made in a satin weave. The face of the goods may, or may not, be made in the same weave as the back.

SATIN BROCADE: Satin ground with raised patterns of flowers, foliage, scroll work, etc., woven on Jacquard looms.

SATIN DAMASK: A heavy, rich silk cloth made on the Jacquard loom, with fancy weaves and embellishments, or a pile construction. The other meaning of this term refers to the best quality linen damask used for table linen.

SEWING SILK: Thread silk made for hand or machine sewing. It is made by twisting or plying several single threads together and doubling two, three, or more of these in the opposite direction.

SHANTUNG: A plain woven, lustrous fabric made from tussah silk. It has a ridged texture achieved by the addition of douppioni yarns.

SHARKSKIN: Fine, tightly woven silk suiting with raised surface.

SILK ALPACA: Fine-textured, rather lustrous fabric, woven of all-silk yarns or of silk and wool.

SILK - AND - WOOL FAILLE: Closely woven, fine-ribbed fabric, blending silk with wool. Has a silky hand, with dry, firm texture.

SILK BATISTE: This diaphanous fabric comes in plain or figured effects, and may be woven with small dot effects for summer dressgoods.



SILK BOUCLE: Nubby-textured silk fabric woven of yarn twisted to produce a looped surface.

SILK CASHMERE: Silk fabric made in a twill weave that gives a soft, cashmere-like finish.

SILK GAUZE: Thin, wispy, transparent fabric with a design woven in by Jacquard looms.

SILK JERSEY: A fabric woven or knitted of silk yarns, by the same methods as used for wool or cotton jerseys.

SILK LINEN: Medium to lightweight silk fabric woven with thickened, irregularly spaced ridging to simulate linen cloth.

SILK SERGE: Twill-woven silk of high texture, used largely for lining fabric.

SILK TWEED: Heavy-textured silk woven in tweed effect and usually flecked with two or more colors.

SLIPPER SATIN: A strong, compactly woven cloth used chiefly for evening footwear.

SLUBBED SILK FAILLE: Wide-ribbed faille with a nubby surface.

SPUN SILK: Yarn made from true silk waste and fibers from pierced cocoons. The fibers are short and they are spun according to the cotton principle, being degummed before spun.

SURAH: Lustrous, soft dress-weight twill silk often woven in plaid patterns. Uses include, neckwear, mufflers, blouses, and dresses.



TAFFETA: The term implies *twisted, woven*. The fabric is made in a plain weave and the textures vary. Popular taffetas include faille taffeta, paper taffeta, pigment taffeta, and tissue taffeta.

TUB SILK: Washable silks used for summer wear. Originally the term implied grey goods, or cloth as it came from the loom.

TULLE: Sheer silk cloth with hexagonal mesh. Cool, dressy, and delicate, it is also known as silk net. Much used in ballet materials.

TUSSAH SILK: Sometimes called *wild silk*, it is the product of the uncultivated silkworm, which feeds on leaves of the oak tree, castor oil plant, cherry tree, and uncultivated mulberry tree. The product is a sturdy and rather tough silk fiber. Shantung and similar weaves are made from tussah.

For a more complete glossary of silk facts and terms, see *AMERICAN FABRICS* No. 15, issue of Fall, 1950.





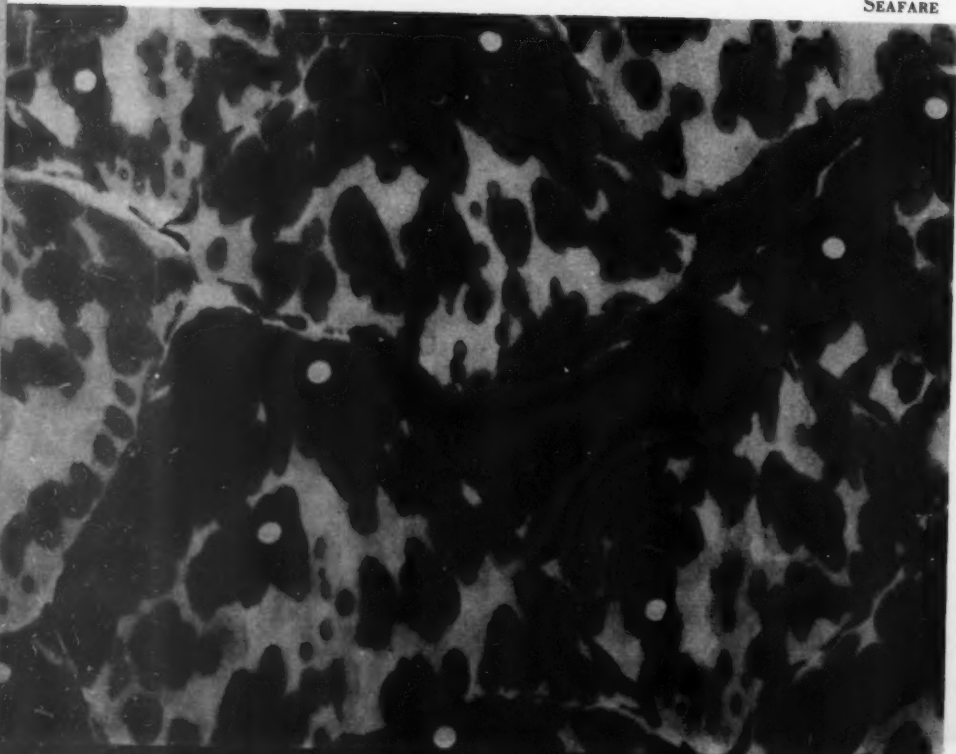
PINEAPPLES



PEARLS IN AN OYSTER



SEAFARE





An example of de Givenchy's creativeness in the field of all-silk prints, executed by ROBAIX

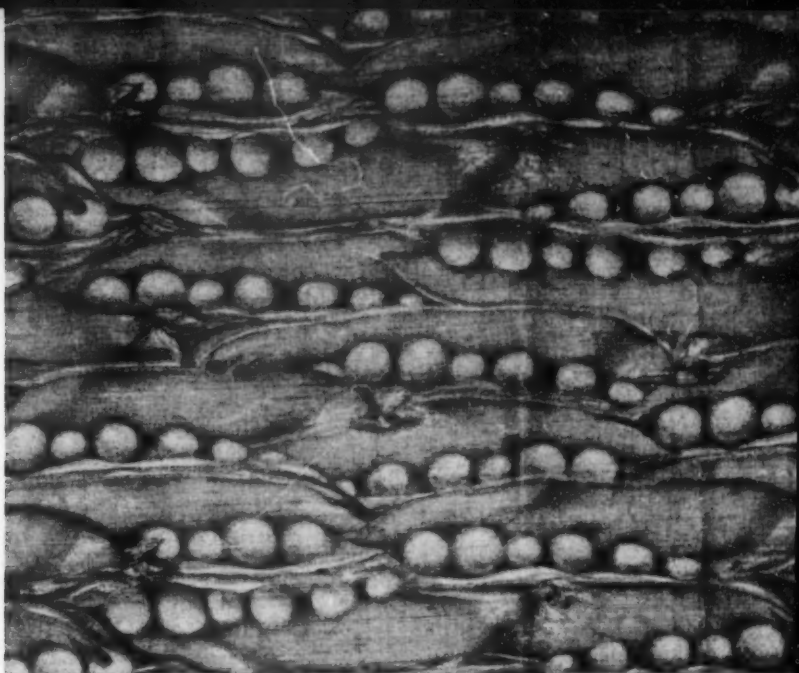


A Leading French Couturier and an American Textile House Combine to Create Fun and Art in High Fashion Silks

THE SILK PRINTS reproduced on these pages, designed by Hubert de Givenchy, young talented phenomenon of the French couture, bring freshness and diversity to an area that is too often overloaded with banality and fashion clichés. Last year de Givenchy scored a fashion bull's-eye with his fur prints, and his series of fruits, vegetables, and seafare are a worthy successor this year. Perhaps these prints will never find their way to the bargain counter, but exclusiveness is also an important part of the style picture. Not everything we produce in America needs to be for everyone. Even de Givenchy's elders in fashion, like Fath and Dior, concede his genuine contribution by the most valid testimony of all . . . they include many of his prints in their own collections.

Givenchy, jokingly referred to as the *couturier des pauvres*, approaches the use of fabrics in an original way. When he used white sheeting for blouses, capes, and shawls in his first collection, a sensation was created by its overwhelming acceptance. His classic shirt of white sheeting with black Schiffli embroidery has become almost a uniform. Flannels, velveteens, corduroys, too, lose their familiar utilitarian look when handled by Givenchy.

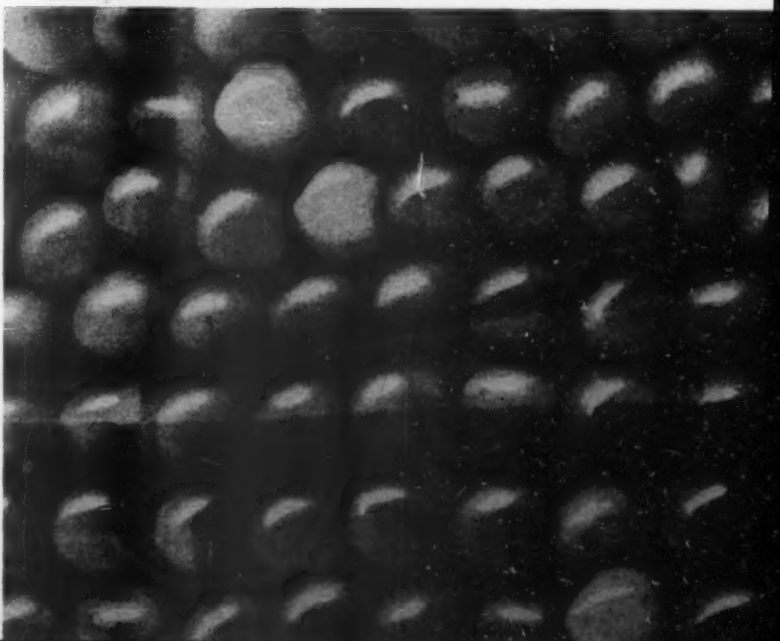
Robaix, Inc., has done a superlative job in printing the Givenchy designs for the American market. Our own talented designers will have a good opportunity for high style expression . . . but let the designs themselves speak and germinate ideas. — C.C.



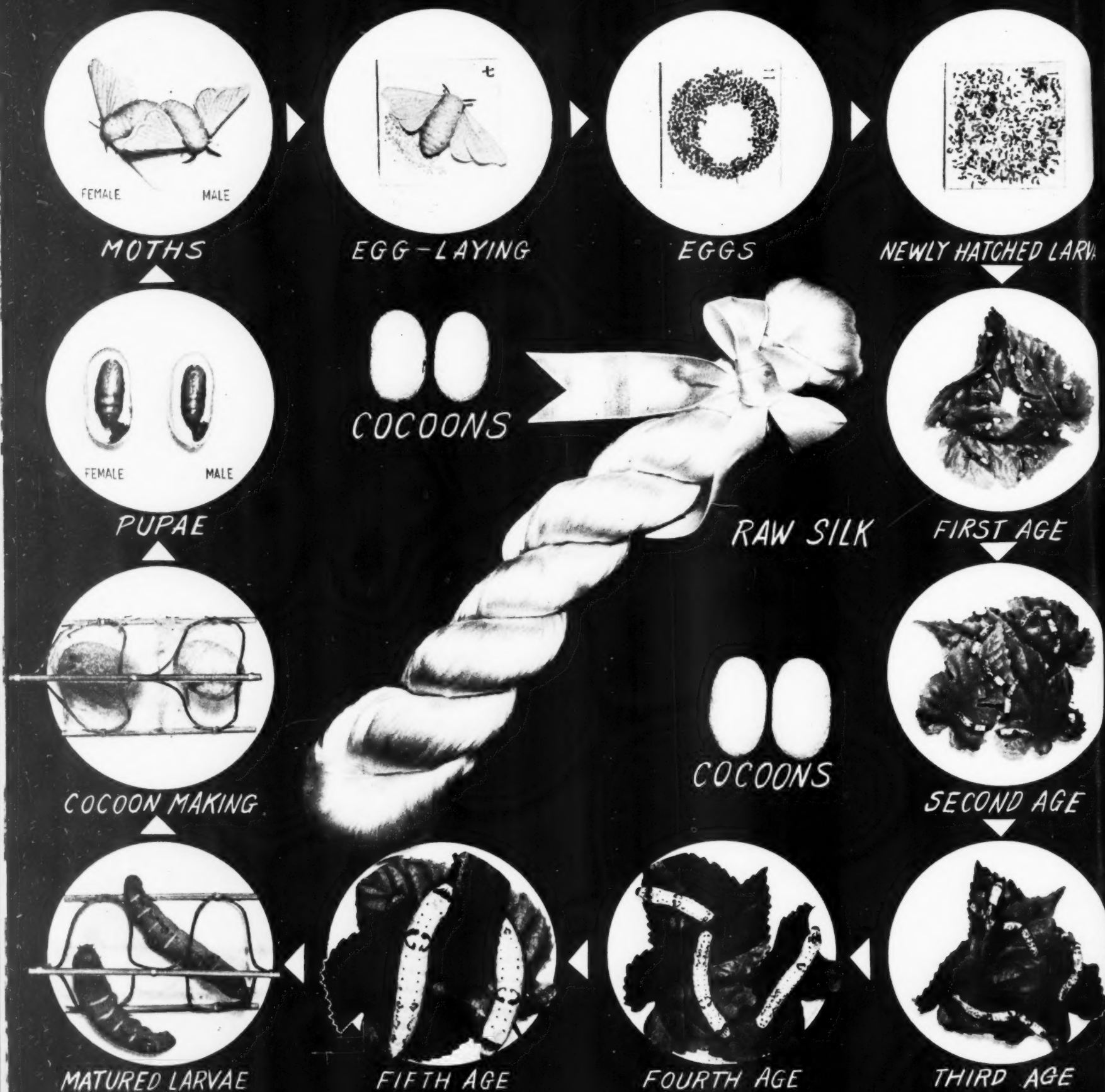
PEAS IN A POD



CHERRIES IN A BOX



The LIFE CYCLE of the SILK-WORM



THE PROCESS STARTS with the silk moth who deposits about three hundred fifty eggs or seeds, each about the size of the head of a pin. Each egg has a small spot on one end, and when hatched the worm gnaws a hole through this spot. Three to seven days later the worm hatches out of the seed and begins to feed on tender mulberry leaves. The silkworm next passes

through five stages, taking about thirty days. It then begins to spin, at the rate of a foot of silk a minute, to complete the cocoon. The next step is the emerging of the silk moth from the precious cocoon. As soon as the fully grown silk moth has mated and laid a new generation of eggs, it dies . . . and the cycle of egg-to-chrysalis-to-moth continues all over again.



ARV



F





*An example of spun tussah
or wild silk, which forms the basis
of shantung types of weave, and is
much in fashion use today*

The PRINCIPAL TYPES of SILK

... continued



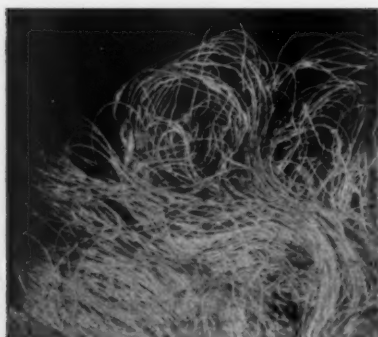
Undegummed Silk



Organzine



Bourette Silk



Douppione



Spun Silk



Tram Silk



Silk ... for every casual but snooty occasion



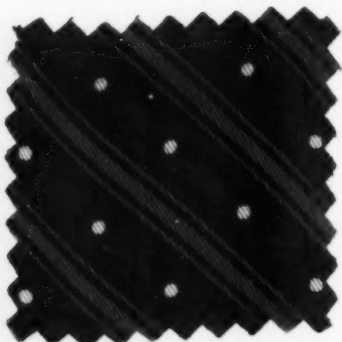
Silk ... the fiber that was known to the Indians and in the service of royal kings and princes, now in new variations to the modern gentleman's wardrobe. Its resurgence of popularity has been brought about largely through new looking fabrics developed in Italy and now manufactured by domestic mills. These new silks, because they give a fine soft drape, rather than a shiny or satiny effect, are extremely masculine. Silk, because of its great strength and low shrinkability, can be woven into fabrics that give the maximum in comfort and service. Because of great variety in design, tone and handsome colors are achieved, some of the items in which these newer fabrics are to be found in men's apparel today are shown on this, the opposite and succeeding pages. There are many other variations and uses.

Printed and created on this page ... Silky, so smooth, new silk dress with slanting by Hahnemann Fabrics, Inc., is a good one in the country by Lord of London.

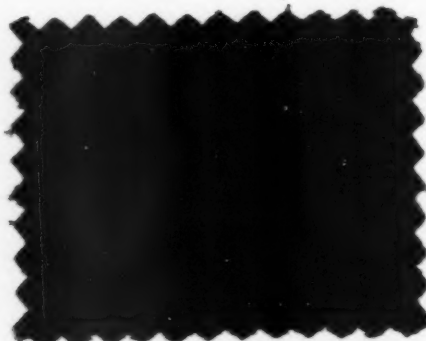


THE SILK TUXEDO combines in this one garment two newsworthy features: a new evening color - charcoal blue ... an extremely light weight. Wearable any season in town ... equally appropriate at southern resorts or on cruise boats. Tailored by H. Freeman & Sons of Philadelphia from an American Silk Mills fabric, as shown alongside, which is loomed from a blend of raw Tussock (wild) and cultivated silks.

Pages reproduced from Gentry Magazine



A fine pure-dyed tie silk, precision printed. By CHENEY BROS.



All-silk men's suiting with a nubby weave. By AMERICAN SILK MILLS



Elegance ... Color for Black Tie Evenings

Not to be confused with other in dinner jackets for evening and morning occasions ... color for any occasion in which where the conventional black dinner jacket is in order. Made from an elegant silk fabric (shown in inset), the combination of black and dark red and blue elements in the pattern of the fabric gives the impression when viewed at a distance of a deep, rich crimson. Custom-colored with other silk dinner and other evening dresses ... by Meyer Inc., Philadelphia, Pa.

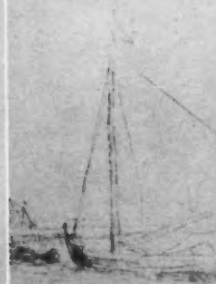


THE SILK TWEED SUIT

For the first time this season ... a new suit with a masculine tweed look that can be worn with no restriction at all. In fact, by Robertson, it is a complete wardrobe (shown in inset) that is a complete wardrobe. It was originally inspired by the ... of the ... country ... The ... who were the ... through ... have ... the original ... offer. Tailored in this country with hand-stitched ... by Robert ... the suit is appropriate for any business day or night. The ... of the ... model ... is a ... for wear in the ... with ... color ... in ... and ... a ... and ... for ... by ... the ...



The Silk Topcoat ... Set in the mind ... rich in the eye ... giving the warm glow. Another way in which silk is finding its way into the wardrobe of well-groomed men. Custom-colored by Gray & Langel Inc., New York, into this smart single-breasted overcoat, the fabric, loomed in this country by Robertson, weaves Italian dupioni even to give a rough-textured, hand-loomed impression. A subtle touch of extra luxury ... the silk found lining (shown in inset). Pocket ... in handsome ... make ...

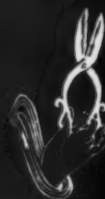


Silk a best seller in the better men's lines

ABSENT FROM MEN'S WARDROBES for many years, except for certain accessory items, fabrics loomed from silk yarns are now very much in evidence. In warm weather clothing, suits tailored from silk fabrics can now be ranked in the best seller class in better price lines. In sportswear . . . odd coats, blazers, slacks, knee-length shorts, sport shirts . . . various types of silk fabrics are all meeting with consumer acceptance. For year-round, all-climate evening wear the use of silk fabrics has long passed the experimental stage. Topcoats and suits for cold weather wear are making their appearance at the custom level. This resurgence in popularity has been brought about largely because fabrics now produced not only add a welcome new look to men's wardrobes, but are functional as well. Sensing the coming importance of silk fabrics for men, GENTRY was among the first to tell the story to the consumer. Since Spring of 1952 its fashion pages have consistently reported new arrivals . . . pointed out their place in men's wardrobes. There is every reason to believe that the acceptance of fabrics loomed from silk is still in its infancy. Silk, with its great tensile strength, low shrinkability, and its magic quality name, can be expected to be important in men's wear for many years to come. The horizons it can reach are unlimited providing mills continue to develop smart masculine fabrics interesting in appearance and hand.



Jacket of a dinner suit of black corded grosgrain silk, with self-covered buttons and moiré silk shawl collar and lining, made for the Maharajah of Kapurthala. A single-breasted three-button waistcoat was made to go with the jacket, likewise of grosgrain silk with moiré shawl collar.



Lightweight cape made from a white honey-comb worsted of 16/17 ounces, lined throughout with Mediterranean blue silk. The two-way Prussian collar is finished with solid silver buckle and chain. The garment was made to be worn in a hot climate by the Maharajah of Kapurthala.



Silk moths mating.

Silk

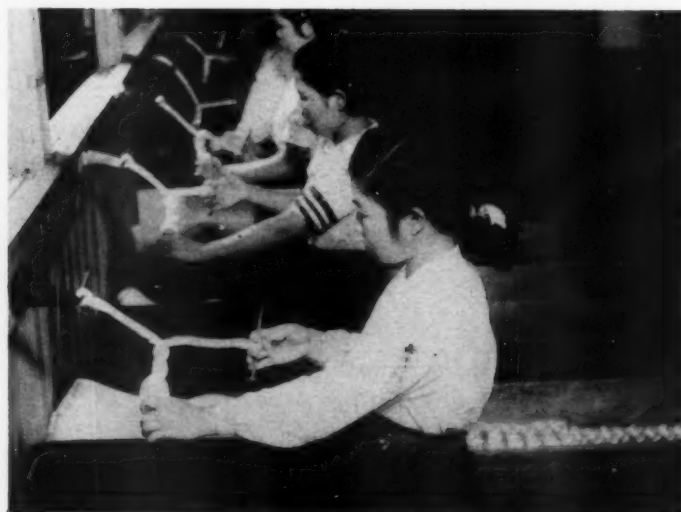
... a fascinating business



Sorting the eggs of the silkworm on paper sheets.



Making up the cards, stacked at rear, for shipping.



Skeining the silk by twisting hanks of reeled yarn.



Marketing the cocoons, which are being examined by traders. A board at rear announces the prevailing prices of the day.



TRUE OR FALSE?

Quiz yourself with thirty pertinent questions relating to the cultivation and production of silk. Refer to the section below after you have checked your answers, and score 3 1/3 for each proper answer entered. Ratings: 90-100, excellent; 70-87 good; 60-67, fair.

	True	False
1. The Latin term for silk is sericum.....	_____	_____
2. Seide is the word for silk in French.....	_____	_____
3. The Chinese knew silk by the word soie.....	_____	_____
4. The Father of the Silk Industry in France was Louis XIV.....	_____	_____
5. Pasteur is known as the savior of the silk industry.....	_____	_____
6. Attempts to raise silk in this country have been successful.....	_____	_____
7. Tussah silk is known for its good wearing and abrasion qualities.....	_____	_____
8. High quality silk called douppioni comes from Italy.....	_____	_____
9. A filature is where silk reeling is done.....	_____	_____
10. Sericin in silk is comparable with yolk and suint in wool.....	_____	_____
11. The higher the boil-off in silk, the poorer the quality.....	_____	_____
12. True silk-worms known as Lepidoptera are really scale-ringed insects.....	_____	_____
13. Silk-worms which reproduce several times annually are known as polyvoltine.....	_____	_____
14. The female cocoon is usually compared with a peanut in size.....	_____	_____
15. Male cocoons are always oval in shape.....	_____	_____
16. A separate silk filament is known as a bave.....	_____	_____
17. The two joined filaments of a silkworm are called brins.....	_____	_____
18. Sericin or silk gum cements the brins or two filaments of the silk worm, as they are emitted in spinning.....	_____	_____
19. Reeled silk filament from a cocoon is always more than 1,000 yards in length.....	_____	_____
20. The term <i>titre</i> is used in the form of a fraction when referring to, say, a 14/16 denier silk filament.....	_____	_____
21. There are 2,560 yards in one pound of a Number One Dram Silk...	_____	_____
22. The international weight for one denier is .05 gram.....	_____	_____
23. Frison silk is too coarse for actual reeling.....	_____	_____
24. Ten silk cocoons show a total of ten filaments when reeled.....	_____	_____
25. The trademarks of a silk filature are called chops.....	_____	_____
26. There are as many skeins in a silk book as there are silk books in a bale.....	_____	_____
27. Lousy silk is an accepted term in the silk trade.....	_____	_____
28. Far Eastern silk bales weigh about 250 pounds.....	_____	_____
29. European silk bales weigh 133.33 pounds to the bale.....	_____	_____
30. A silk contract is for 5,000 pounds.....	_____	_____

TRUE OR FALSE ANSWERS

1. True. 2. False. The German word for silk; French is *soie*. 3. False. The Chinese word is *si*. 4. False. Francis I (1515-1547) is regarded as the Father of the Silk Industry in France. 5. True. 6. False. Many efforts have been made at different times, but all have been futile. 7. True. 8. False. Douppioni is silk from two cocoons that have nested together. 9. True. 10. True. 11. False. The opposite is true. 12. True. 13. True. 14. False. The statement is true of male cocoons. 15. False. The statement is true of female cocoons. 16. False. A separate silk filament is known as *brins*. 17. False. Two joined filaments of a silkworm are called a silk filament. 18. True. 19. False. The length ranges from 300 to about 1600 yards. 20. True. 21. False. There are 256,000 yards in Number One Dram Silk yarn. 22. True. 23. True. 24. False. There are 20 filaments. 25. True. 26. True. 27. True. 28. False. The weight of a Far Eastern silk bale is about 133 to 135 pounds. 29. False. A European silk bale weighs about 250 pounds. 30. A silk contract is 1300 pounds.



Silk makes news

Silk, cotton and rayon lace in flounce and galloon style for bridal and formal dresses.
By MAX MANDEL LACES



IN WEDDING GOWNS

Appropriate for the cathedral as a wedding setting is the combination of ivory silk satin overlaid with matching silk lace in this Embassy bridal design. Delicately scalloped neckline veiled in fine invisible silk net reaches to the shoulder tips. Silk lace covers the full skirt graduating into the wide train.

IN RAINCOATS

A straight, slim raincoat by Lawrence of London is interpreted in natural silk pongee. Buttons are self-covered, and the coat is lined throughout in matching silk pongee.



IN CHILDREN'S DRESSES

For the belle of the birthday party... a dress by Phillip Hultar, of crisp, iridescent, burnt rose silk taffeta, with two deep tucks circling the shirred skirt. Underneath peeps a silk taffeta slip edged with ruffled net.



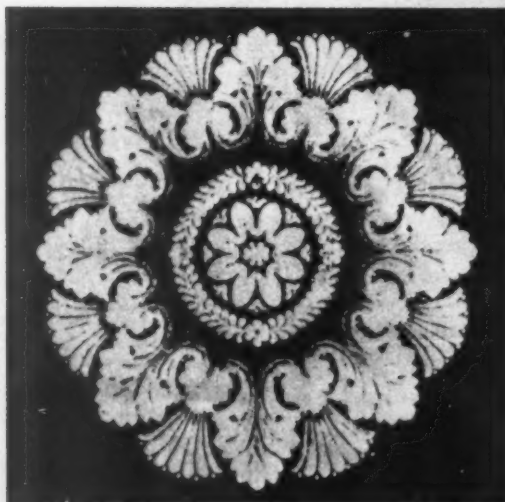
IN RESORT FASHIONS

Italian crossbar silk in natural and navy makes this Anthony Blotta ensemble... loose-fitting cardigan jacket hugging the hipline, worn over a figure-sculpturing dress. Scooped neckline of dress is banded in navy silk faille, as on the jacket.



IN STORE WINDOWS

Second prize winner in the International Silk Association USA Ten Best Dressed Silk Windows was Pomeroy's of Harrisburg, Pennsylvania.



*Empire
Motifs*



Some Empire motifs adapted from classical designs. *Top:* the Amphora with Olive Branch, in a geometric border. *Left:* the Acanthus Leaf. *Right:* the Laurel Wreath. *Bottom:* the Rose, used as both wreath and centerpiece.



THE SILK TEXTILES OF THE EMPIRE PERIOD

Some of the finest silks made for decorative uses in America within recent years are those reproductions of original fabrics employed in furnishing the newly reconstructed White House. Stemming from a period when style was influenced by the Empire, the outstanding qualities of silk as a decorative fabric are nowhere better exemplified. The Empire Period left us an extraordinary richness of inheritance which is deeply significant for the textile world of today. In addition to the revival of many motifs which have never since that time gone out of use, the establishment of Jacquard weaving and roller printing during the period laid the prime foundations of our present-day mass market textile operations.

BY JOHN KENT TILTON

THE PRESENT YEAR is the 150th Anniversary of the Louisiana Purchase, which was ratified at New Orleans on the 20th of December, 1803. At the time, Jefferson was president of the United States, and Napoleon was first consul of France.

The Empire style was brought forth to glorify a warrior-emperor, Napoleon, who was not only a military strategist and lawmaker, but was as well an arbiter of the arts. During the meteoric rise of the Little Corporal to power and until his coronation, Napoleon had led the austere life of a soldier who had never acquired a knowledge of the arts. This fact, however, did not deter him, upon his ascent to eminence, from creating a style of art and exemplifying a grandeur befitting an emperor.

In his desire to efface all vestiges of the arts associated with the Bourbon monarchy, Napoleon reverted for inspiration to the periods of antiquity that were noted for their military prowess. All feminism in French art was effaced. The Empire style was strictly masculine. Napoleon gave France a Greco-Roman art as a lasting memento to himself. It was not the age, it has been said, that created the Empire style; it was Napoleon himself.

The Greco-Roman Influence

The classic revival which had begun in the Louis XVI era continued to develop with new interpretations during the Directoire, when it evolved into a Grecian form mainly through the endeavors of the painter Jacques Louis David. The Directoire style never really typified the tastes of the Parisians. It was a transplanted art taken from an ancient civilization, and it required such a dominant personality as Napoleon to make it vital. Napoleon consolidated the Grecian influence with the Roman, although emphasizing the Roman elements. But even when the Empire

style had matured, it was still alien — never French at heart. It was never a natural development, as were the arts of the former Bourbon kings; its quality was forced.

The decorative arts of the Empire possessed a colorful and grandiose magnificence devised to impress the foreign sovereignties and the public. The French deemed it but proper that their emperor should be surrounded by pomp and ostentation. Napoleon, a born showman, was by temperament well equipped to supply the drama.

Classic Motifs in Empire Art

There were three phases of Empire art: Greek, Roman, and Egyptian.

From the Greeks were borrowed the fret, anthemion, honeysuckle, classic lamps, urns, amphorae, and caryatides. Sheaves of wheat, drums, trumpets, harps, crossed lances, and rosettes were carried over from the Directoire. The rosettes were often alternated with six-pointed stars in a diagonal spot-pattern.

From the Romans, Napoleon appropriated the eagle. It was a bird that had an important role in Grecian mythology, which held that it dwelt in solitary aloofness on Olympus. The eagle carried the thunderbolts of Zeus in its talons. But of more importance to Napoleon was the fact that the eagle had surmounted the standards of the Roman legions. Its martial significance appealed to the new self-appointed emperor. The eagle and the stars were Napoleon's personal emblems.

The star dates back in Biblical history to David, the peasant king, of whom it was symbolical.

Laurel wreaths and sprays also ranked high in importance. The laurel wreath was emblematic of victory; in ancient Greece,

(please turn)

Mr. Tilton is Director of The Scalomandré Museum of Textiles



ABOVE: *The Monuments of Egypt*, designed by Lebas to commemorate, and perhaps to sell to the public, Napoleon's Egyptian campaign, was one of the earliest fabrics decorated by roller printing and was made at Jouy by Oberkampf, the inventor of the process. BELOW: *The graceful motif of Swans*, which decorates this damask, appears in Empire fabrics as the emblem of the Empress Josephine. Napoleon's own emblem was the Eagle.



Empire Textiles . . . continued

it was used to crown the victors of the Pythian games. It was also an emblem of Apollo. The Romans as well were partial to the laurel wreath, and used it as an imperial crown.

No other symbol has been utilized for so many purposes, or was so adaptable as the laurel wreath. The Napoleonic "N" within the wreath composed a decorative motif for throne room or state chamber. With a lyre, it became a detail of ornament for a music room. Enclosing a bust of Racine or Molière, it became ideal for decoration in a library.

The bee is another much used motif in Empire ornament. Bees had a fascination for the emperor, perhaps because, like himself, they were indefatigable workers. As an ornament, the bee dates back to the time of the Merovingian kings. Goldwork embellished with bees was found in the tomb of Childeric I, who died in 481.

The helmet of the Roman goddess of war, Minerva, the lictors' fasces and cornucopias were other Roman devices evidenced in Empire design. When a feminine touch was required, as in boudoirs, cupids were used — but they were always chubby little warriors, armed with bows and quivers of arrows. Napoleon's Egyptian campaign was commemorated by introducing into design the symbols of the Pharaohs. We find the sphinx, pyramids, obelisks and lotus in textiles, especially in the toiles de Jouy.

The Rose as a Symbol

Floral motifs, while not completely ignored, were relegated to a subordinate place in the Empire arts. The exception was the rose, which has always been the most popular flower in Christian art. It had been adopted by the early Christians when they were being persecuted by the Romans. The rose was their symbol for charity, brotherly love, and God's heavenly grace. During the



The Eagle was originally the symbol of Roman imperial might, and was revived in connection with the Empire. Here it is combined with the five-pointed star of the U.S. flag in a decorative fabric in the President's study in the White House. This reproduction, woven after the original by Scalamanré, is executed in grey-blue and gold.

Italian Renaissance it lost its religious significance and became the poetic emblem for wisdom, beauty, and romance. The Empire rose was often portrayed in wreaths or intertwined with laurel, ivy, or myrtle.

Love of Brilliance

Napoleon had little use for dull textured weaves. He preferred silk textiles that radiated a luster. Satin was selected because of its sheen, and silk velvet because of its richness and the dramatic effects of its highlights and shadows.

The Emperor encouraged the printing of toiles as one of the



Napoleon favored the bee as an emblem representing the industry of his people, and this fabric, woven in the more romantic period of the Second Empire, endeavors to revive the First Empire fashions, replacing the bee with the butterfly.

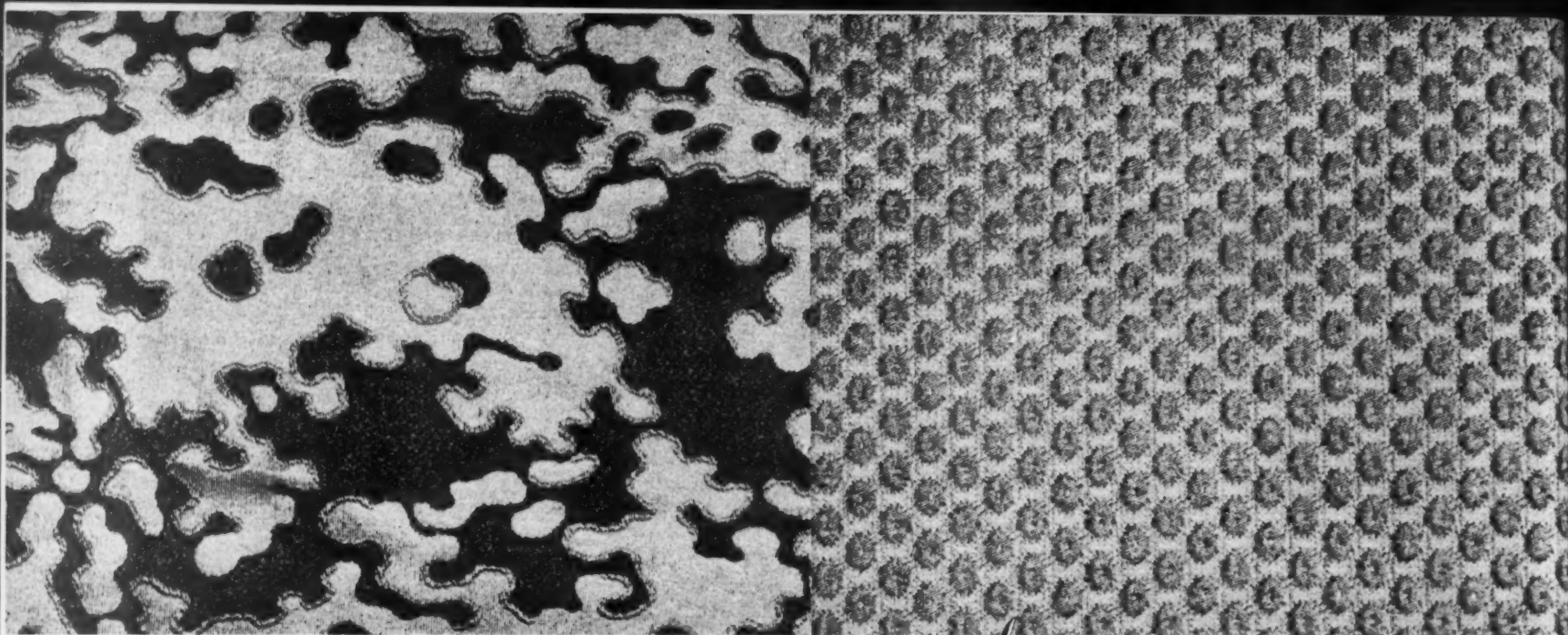
means of advancing industry and creating employment. In 1801 Oberkampf began printing from engraved metal cylinders rather than metal plates. It was a process that heralded mass production. However, the repeats of the designs were small because of the limited circumference of the roller. Napoleon made two official visits to Oberkampf's printing establishment and decorated him with the cross of the Legion of Honor for his achievements.

In 1801 Joseph Marie Jacquard perfected the loom for weaving mechanically pattern-textiles by means of perforated cards. In recognition of his invention, Napoleon conferred honors upon Jacquard, including an annuity.

Trimmings enhanced the beauty of the Empire textiles. The effeminate tasseled and cut fringes of the 18th Century were now taboo. Twisted, straight-edged bullion fringes were the fashion. Likewise popular was the long pendant and ball mold fringes covered with silk. Gimps and wide bandings of satin, faille, or velvet were woven with designs of contrasting colors which were often brocaded.

On the downfall of Napoleon, the restored kings of France endeavored to eradicate all vestiges of the Empire Period. Yet they were never entirely successful. Napoleon was too dominant and colorful a personality to be easily effaced. His influence in the arts was reflected through the early part of the Restoration.

Thus the Empire Period has left us an inheritance of extraordinary richness and significance for the decorative textiles of today. It consists not only of classical motifs reworked within the context of the Eighteenth and emerging Nineteenth Century perspectives, but the development of Jacquard weaving and roller printing — mainstays of modern mass market textiles. **END**



THE FABULOUS FABRICS shown on this page and styled by Philip Vogelmann of Onondaga, were made possible by intricate weaving and a generous use of silk. Produced on Jacquard looms they give the designer the wherewithal to create the luxurious result that is so wanted in to-day's fashion picture.

BELOW: A yarn-dyed pure silk jacquard woven with bow knots and flowers over a multi-colored plaid with French lamé stripe.

ABOVE LEFT: A pure dye silk jacquard with a 'broadtail' effect.

ABOVE RIGHT: This yarn-dyed silk jacquard has a quilted dot in the middle of which is woven a French lamé pinpoint.

At left, a battery of looms weaving fine silk in one of the Onondaga mills.





**EN ROUTE
FOR
THE 1953
HOLIDAY FASHIONS**

"L'Art et la Mode" of Paris Says.....

FIRST COLLECTIONS: A new line is revealed in those presented by the couturiers: The waist is lifted either by inset sections, by crossed over effects, by a skirt forming a corselet movement, or by a wide, high draped sash.

JACQUES FATH whose mid-season collection is very important displays two very different lines:

- that with a supple waist hardly perceptible, placed below the hips
- and that, in contrast, with a definite uplifted effect.

PAQUIN has shown some delightful models, one of which has a short "spencer" of white piqué with a double-buttoned effect and which widens out over a black woolen dress whose narrow skirt comes up over a white piqué top worked with lingerie pleats.

All the skirts have this high corselet effect.

THE DIRECTOIRE AND EMPIRE STYLES make themselves conspicuous.

THE LIGHT MUSLIN DRESSES are stiffened by tulle or horse-hair petticoats.

THE DECOLLETES are generously rounded, often heart-shaped or of "balcony" persuasion.

THE BUST is fuller to accentuate the straight slim fall of the narrow skirts.

THE PRINCESS LINE is still in favor.

COLORS remain light and portray the various flower shades. Among these white is all-conquering and will be so.



1 and 2 silk prints
by Skinner

Skinner
FABRIC

"Look for the Name in the Selvage"

QUAL 9982 WIDTH —
COLOR 4174
YDS 516 LOT

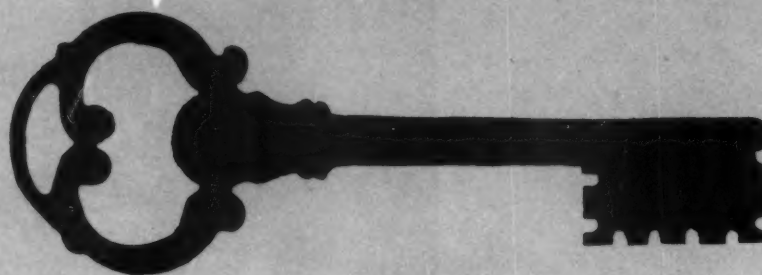
Skinner
FABRIC

"Look for the Name in the Selvage"

QUAL 9987 WIDTH —
COLOR 3145/15
YDS — LOT —

8 6 2 8 1952
des. 31530

3, 4 and 5 silk jacquards
by Schwarzenbach-Huber



*American Fabrics presents
a key to the*

MAN-MADE FIBERS

FIBER	FAMILY	MAJOR PRODUCERS	CHARACTERISTICS	SOME NOTES
Acetate	Cellulosic	Celanese American Viscose Tennessee Eastman Du Pont	Dyes well; has a crisp, rich, silk-like hand; fabrics made of this fiber wear well and have good crease-retention.	Noted for sleek look in fabrics with a luxury character.
Acrilan*	Acrylic	Chemstrand	Softness and warmth-without-weight; an all-round fiber with resistance to shrinkage and creasing; to moths, perspiration, and sunlight.	One of the new acrylics introduced in market in 1952.
Dacron*	Polyester	Du Pont	High strength with outstanding wrinkle-resistance and a soft wool-like hand; easy to launder and a natural for apparel.	Keep your eye on this fiber in men's apparel applications.
Dynel	Acrylic and Polyvinyl	Carbide and Carbon Chemicals	Strong, warm, and quick-drying; will not shrink and retains its shape when wet; acid-resistant and moth-proof; flame-resistant.	An important new blending fiber in creating new fabrics.
Fiberglas*	Glass	Owens-Corning Fiberglas	Non-absorbent, moth-proof, and mildew-proof; is easy to clean and dimensionally stable; resistant to sunlight; no deterioration with age.	A natural for decorative fabrics, draperies, curtains.
Nylon	Polyamide	Du Pont Chemstrand	Good tensile strength, wet or dry, with stability and high abrasion-resistance; wrinkle-resistant, easy to wash, and wants little ironing.	In great favor with the public for its easy care qualities.
Orlon*	Acrylic	Du Pont	Warmth-without-weight and a soft hand; drapes well and does not crease; moth-proof and sun-resistant; dries fast after washing.	Watch this fiber in new important blends for clothing.
Rayon	Cellulosic	American Viscose Du Pont Enka Rayon Industrial Rayon American Bemberg	Excellent affinity for dyes and outstanding adaptability, combined with moderate cost; accounts for largest man-made fiber volume.	Of all man-made fibers, by far most widely used today.
Saran	Vinylidene Chloride	National Plastics Saran Yarns Firestone Lus-Trus	Possesses bulk and coverage, toughness and flexibility, combined with resistance to stains and chemicals; moth- and flame-proof.	Important in carpets, draperies, and upholstery fabric.
Vicara*	Protein	Virginia-Carolina Chemical	Soft wool-like luxury hand, superior resilience, draping quality, and stability are combined with moth- and mildew-resistance, long life.	Noted for its luxury softness in woven and knitted goods.

*Registered.

progress report on the new fibers

NYLON

SOME OF THE NEW NYLON apparel fabrics are woven from yarn having a nylon monofilament core with wool covering. These are being woven in lighter-than-ever weights and may be looked for in some spring suitings. Such fabrics, though containing only 10%-18% nylon, are extremely light and strong and are completely washable.

There is another version of this nylon core fabric in a gabardine which retains the regular appearance of a fine woolen gabardine, but, since it contains 12%-18% nylon, possesses as well lightness and strength (L. W. Guild).

Another nylon core yarn process is used with cotton under the name *nyfoyle*. This is shown in a line of cottons for resort and spring wear (by M. and W. Thomas). If it proves acceptable to the public, it will add yet another technique in new style possibilities for cottons.

Nylon-rayon blends are proving almost a necessity for men's outerwear for added strength and abrasion resistance. Ten to fifteen percent of nylon achieves the desired result.

Similarly, nylon gives new strength and durability to wool and can upgrade woollens substantially to alter a well-established picture.

Fabrics with nylon monofilament warp are being further developed, in such forms as double-faced fabrics with cotton filling (Parliament) and sheer fabrics with a slubbed or knotted silk striping (Cavalcade).

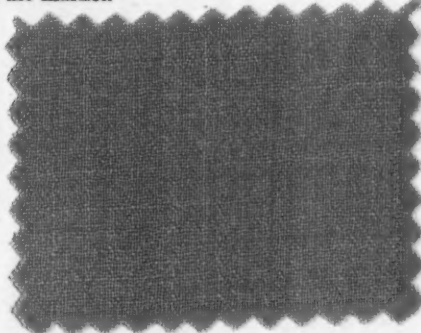
Another nylon warp development is the so-called lacy tweeds (American Silk Mills) which are high-style sheer fabrics constructed with rayon and acetate in the filling. The nylon imparts luxurious hand and appearance, lightness and strength, to this fabric.

In nylon sheers styling-up continues, and there are prints supplemented by attractive yarn-dyed effects in the range of tricot dress fabrics. In tricot types of fabric the stabilized stitch has brought certain advantages over woven fabric types because in the case of nylon, it gives greater opacity with more porosity (Meltzer).

In all-nylon fabrics an attempt is being made in the so-called *angel-crepes* (Burlington) to achieve a more interesting and sophisticated surface effect, with a duller and more opaque finish than hitherto.

The bulky or textured filament yarn obtained

by a new du Pont process may prove to be an important development in nylon filament yarns. Fabrics of this yarn have not as yet appeared on the market.



17% nylon core is wrapped with 83% wool to make this feather-weight fabric in a tropical weave for blouses, negligees, stoles, scarves, ties, men's sportswear.

By HOLLY MILLS

ORLON

ORLON* IS MOST ACTIVE in fleeces and in wool and rayon blends for the coming season, while dress weight fleeces should be especially watched for growing popularity.

In wool blends the proportions of Orlon to wool have settled down between 55%-60% Orlon and 45%-40% wool. In general, Orlon is found to spin well on the woolen system and only a small number of worsted fabrics have made their appearance.

Orlon-wool blends are making headway in suit and skirt lines and are also active in the men's shirting field. Their attractive possibilities have led some men's wear mills (such as Lippit) to enter the women's market with Orlon-wool blends in a 50%-50% worsted fabric.

Orlon-wool blends in jerseys are here to stay, the new trend for the season being led by the mills who are working on solid colors in darker shades, in piece-dyed goods (Alamac, Heller, and Wyner, for example). 80% Orlon to 20% wool is a most successful blend in sports shirting at present.

In the men's wear field, Orlon is making steady progress in the direction of flannels, tweeds, and cheviots. In flannels, to obtain the necessary felting, about 60% wool is necessary, and this limits the Orlon content. An example

*Du Pont's acrylic fiber.

of this 60%-40% fabric is presently on the market (Broadbrook).

In tweeds, the Orlon gives shape retention, and some types use 55% Orlon (such as Lockhart by Deering, Milliken). In cheviots, for construction reasons, wool is used in about 60% to 40% Orlon (Warren Woolen). Orlon is also proving suitable for improving the quality of the softer finished worsteds in all weights.

All-Orlon fabrics have been conspicuously successful in the fleeces, and they are outstanding in the coating field for hand and lightness. Following this success, the big thing may be the dress weight fleeces which are appearing in delicate colors suited for spring and resort wear (Princeton Knitting and others).

Other all-Orlon fabrics include printed mesh, which was successful in Vera Maxwell's line, and a woolen type crepe sheer which is being made in black, white, and a range of colors.

In Orlon-rayon fabrics there are 60%-40% and 40%-60% types in dress weights and a notable 50%-50% crepe (Burlington). There are signs that an all-Orlon spun challis type of fabric now being developed may prove popular in the spring line.

In Orlon-nylon an important development may be the 60% Orlon-40% nylon dress weight fleece shown in Carolyn Schnurer's line (Princeton). With about 10% nylon, Orlon is proving acceptable in the men's shirting field.

Some of the fine Orlon-silk and Orlon-cotton chambrays which were seen in the market late last spring are expected to be strong again.

News in Orlon is type 42 denoting improved dyeability; in view of this development the coming season may see an enlarged color range, including deeper shades, in all Orlon fabrics.



A 60% Orlon-40% nylon fabric, built to give warmth without weight and to be fully machine washable. For dresses, skirts and sportswear.

By PRINCETON KNITTING MILLS

(please turn)

DACRON

IN ONE HUNDRED PERCENT DACRON* filament dress fabrics, the fine surface effect and uncrushable character achieved are important. There are jacquards in the higher-style lines which are suitable for cocktail suits and street-wear in the spring season (Frank Assoc.). Along with these are found the surah types of fabric, introduced late last spring (Goodman & Theise), which should return strongly in the attractive new printed designs for resort and spring wear.

Dacron-wool in a 25% Dacron-75% wool blend (Einiger and others) has a fine hand and watch-spring resiliency; this blend shows signs of becoming a big item in suit lines. Dacron is also moving steadily into the worsted field, due to the light weight and strength it gives. It is proving most useful in lightweight suitings, although it is going into all weights (Deering, Milliken; J. P. Stevens; Bachmann Uxbridge, and others).

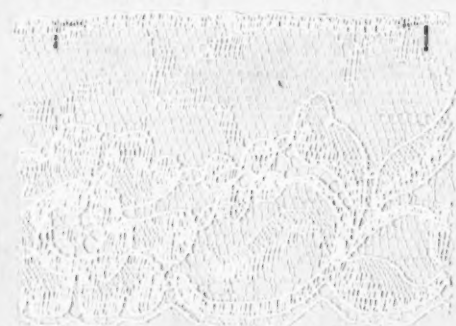
Dacron-cotton in a 50%-50% blend is popular in men's shirts but seems otherwise limited. Nevertheless, at least one mill is putting out a feeler in the form of a Dacron-cotton cloth for women's dresses.

In Dacron jerseys the picture has not yet developed clearly; however, in all-Dacron yarn-dyed tricots many attractive fabrics are shown. Lining fabrics of Dacron in fleeces are in the experimental stage.

In lingerie some 100% Dacron lace is being made and this trend may develop (Native Laces, and Wiener Laces).

In all-Dacron sheers not much is being done to compete with nylon's predominance.

*Du Pont's polyester fiber.



A 100% Dacron lace of Chantilly type designed especially for use in lingerie and blouses.

By NATIVE LACES AND TEXTILES

VICARA

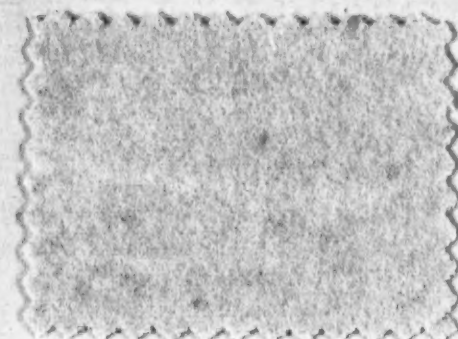
THE INDICATIONS ARE THAT VICARA* in the past few months has become established as a fiber with a big role to fulfill.

While some 100% Vicara items are being made, the biggest advance is in various blends.

For winter and spring, great quantities of knit goods made from a Vicara-nylon blend will be available. This development, which was

*Registered

started among a few manufacturers last season, snowballed rapidly. The result is that thousands of retail stores across the country will be featuring Vicara-nylon blends. This is a case where the product is selling itself and where special promotional play is not necessary to convince the consumer.



The use of 24% Vicara lends a cashmere softness and hand; 10% nylon gives durability and shape retention; 66% wool means perfect tailoring in this luxurious women's coating fabric.

By JUILLIARD

Vicara and nylon complement each other in quite a special way. In men's hosiery, for example, the moisture absorption of Vicara supplements this lack in nylon; nylon's resiliency is balanced by Vicara's high pliability; Vicara's cashmere softness blends with nylon's great durability.

Originally 50%-50% blends were used in knitted applications, but the trend for the coming season is towards 65% Vicara with 35% nylon. This is true both for hosiery yarns and yarns manufacturers are using for sweaters.

The success of the Vicara-nylon blend in knitwear has led to active investigation of blends with other fibers. Vicara-Dacron is being tried out for socks and sweaters; Vicara-Orlon jersey is already on the market. Vicara-Acrilan blends are still in process of being developed. In those applications where more loft is desired, as in heavier types of sweaters, Vicara-nylon is being used; and for the finer knitgoods Vicara-acrylic blends, which have softness and pliability yet are strong and easy to care for, are in the process of being developed.

In woven fabrics the trend is toward luxury coat and suit fabrics. Several men's wear manufacturers will have Vicara-wool suits in medium-to-high price brackets as a special feature in their line. The list includes some of the top names in the field. For spring the Vicara-wool suit is expected to make big news in men's wear.

Vicara-cotton blends are becoming important for sports shirt lines as well as for robes. The new fiber contributes a lamb's wool hand to the character traditionally associated with cotton in fine shirtings. A variation of this blend, and one which is proving highly successful, is 50% combed cotton, 25% rayon and 25% Vicara.

In the heavier weights, for slacks and jackets and warmer suiting lines, a blend containing Vicara and viscose rayon seems to possess good volume possibilities.

DYNEL

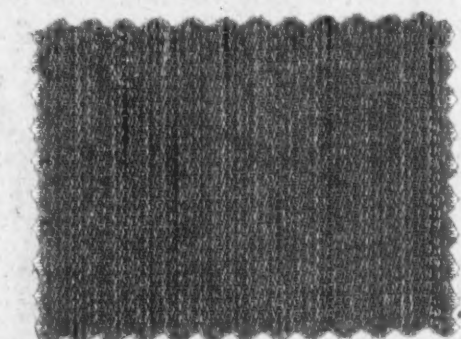
AS DYNEL'S DEVELOPMENT takes more definite form, the trend is toward an increasing number of blended fabrics for apparel uses—in women's fashions, men's suits and slacks, boys' jackets, and children's underwear. It is becoming apparent that Dynel will be a major blending fiber on two counts: performance and price. It adds desired functional features to blends with other fibers; yet its cost is low enough to provide the fabric mill or converter with competitive advantages.

Lightweight flannel for men's suits in blends of Dynel and wool made a highly successful bow recently. With traditional soft texture, the fabric requires pressing only when dry cleaned, and has excellent abrasion resistance. A typical fabric is one with 35% Dynel and 65% wool (Cyril Johnson). Other end uses in men's wear include sports shirts and hose. New developments in men's socks include both Dynel-wool and Dynel-cotton combinations, both of which appear most promising.

With cotton, Dynel helps in retention of a soft hand through many washings. This property has made a Dynel-cotton blend acceptable in underwear; it is now included in the line of several top manufacturers. Blends are in the 50%-50% or 25% Dynel-75% cotton ranges. Infants' sleepers blending cotton with Dynel are also quite successful.

In Dynel-nylon-cotton a 403. challis type fabric (Bates) continues strong.

With rayon and acetate, Dynel provides new versatility in hand and, of course, adds wrinkle recovery. Two flannels on the market have 50% rayon with 25% Dynel and 25% acetate (Chantilly and Longchamp). Sheers of 70% rayon



A suiting fabric with 20% Dynel in the warp and filling, and 80% rayon and acetate which has proved most acceptable for its strength, warmth and crease-resistance.

By ROBBINS MILLS

with 30% Dynel are also proving successful (Cavalcade, Folker, and Hess Goldsmith).

With rayon and wool in a gabardine for children's wear (Lesem Bach), and with rayon and acetate in a children's check suiting (Robbins), Dynel is especially welcome for crease and stain resistance.

In domestics, all-Dynel and Dynel-wool blan-

kets are continuing in favor; a new Dynel-rayon blanket is expected to prove strong in the market, for price and performance reasons.

All-Dynel draperies are making gains with large institutional and shipping concerns where their fire-resistant property is of utmost importance to the purchaser. Dynel fabrics are also beginning to appear more widely in the home decorating field.

In industry Dynel fabrics cover an increasing range in filter cloth categories, are used for specialized chemical-resistant work uniforms and fume bags. Military uses include deep pile casualty bags.

As trimming, Dynel in a deep pile is used increasingly in sports coats, jackets, and boots (Goodall, and Borg).

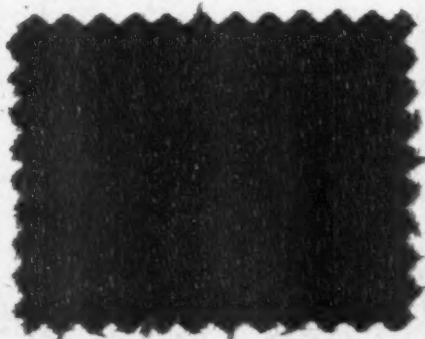
ACRILAN

THE MOST IMPORTANT ACRILAN* development on the market is perhaps a line of sheer spun-type crepe fabrics which are being created from man-made fibers for the first time, in blends of Acrilan with wool and rayon.

Some examples of Acrilan-rayon crepe are being woven with 75% rayon and 25% Acrilan. Others which use a 50%-50% blend have more stability, pleat better, and are rather easier to finish. (Fabrex, Shirley, Hess Goldsmith).

Fabrics such as Lisbon, of 15% Acrilan with 48% rayon (Deering, Milliken), will continue through for spring with fancy patterns, and new effects and colorings for suitings, skirts, shirts, and rainwear.

A fabric of 36% Acrilan with 14% silk and 50% rayon, which has a nubby character, is



A blend of 25% Acrilan with 75% viscose rayon is used in this fabric. The Acrilan is dyed black for heather effect, the color remaining constant under steam pressure for pleat permanence and washability. For women's and children's wear.

By HESS GOLDSMITH

proving acceptable as a suit and dress fabric (St. George).

Flannel types in fancy patterns are made for shirtings and dresses (Robbins Mills).

Flannel types which are made of 50% Acrilan

*Registered.

with 50% cotton (Galey and Lord, for example) may develop in the lighterweights for shirtings and dresses for spring wear.

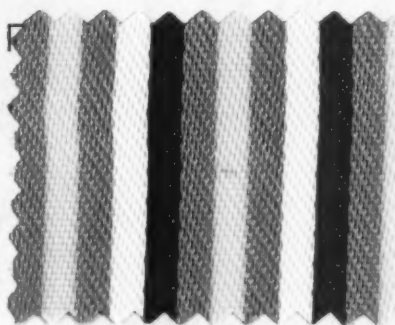
Shirtings and blouse, sportswear and separates fabrics are being developed from Acrilan with spun-dyed acetate yarns in about a 50%-50% proportion.

Acrilan-wool jerseys in a six- to seven-ounce weight made with about 80% Acrilan to 20% wool (Lebanon and Princeton Knitting), may be important for spring. They are suitable for a full range of women's wear and men's shirts, being fully washable.

There is an Acrilan-wool lightweight dress and suiting fancy (St. George) on the market.

In Acrilan-nylon combination, dress fabrics are being developed with nylon filament warp and Acrilan filling, which have something of the character of fine challis. These may prove to be acceptable when they come on the market.

SARAN



A woven monofilament saran fabric which is made in solids, plaids, stripes and overall designs for furniture upholstery, golf bags, luggage and other outdoor uses.

By CHICOPEE MILLS

THE LATEST APPLICATIONS OF SARAN in the consumer and industrial field include an all-saran carpet that was introduced in January at the Chicago furniture market week (made by C. H. Masland & Sons). This carpet is of interest because inherent properties of saran make it virtually stain-proof. By a demonstration carried out in stores throughout the country, it has been proved to the consumer that any stain, including even ink stains, can be removed from this type of carpeting. Also, because of the fiber's pliability, toughness, and abrasion resistance, the floor covering has a long wear life.

Saran marquisette curtains are a new item which began to reach the market in June. They are woven from saran monofilament of about 190 denier equivalent (by Queen Valley Fabrics Co.). The makers of the curtains claim that they can be dunked and rehung immediately, receiving only light handwashing in soap or mild detergent without wringing. Because they are absolutely impervious to moisture, these curtains are said to remain crisp and fresh throughout their lifetime.

There has also been shown an all-saran room featuring, in addition to carpets and curtains, saran-upholstered furniture (Chicopee Mills) and saran draperies (Schiffer). This represents an attempt to create a room where all furnishings are washable, and yet the room retains an air of luxury. This is possible because carpets and fabrics woven from spun saran multifilaments have a look and feel resembling wool.

In the field of industrial fabrics saran is being made into filter cloths of various weaves and weights for the chemical industry, and mechanical anti-friction felt fabrics for machinery, as well as paper-makers' blankets.

FIBERGLAS

FIBERGLAS* DECORATIVE FABRICS are available to the consumer in a number of forms, including marquisette curtains, draperies, casement cloths, and shower curtains. (Hess Goldsmith, Titus Blatter, and others).

The established marquisette curtain is woven in two weights—one for residential use and one for institutional use. Within the past month, a new sheerer weave also made its appearance (Bartmann & Bixer).

An important development is the production of roller print drapery fabrics which appeared for the first time during the 1953 spring market. Screen print fabrics have been available to the decorator and institutional trade for a longer period of time.

Also new in the past season was the successful production of casement cloths that fall between the marquisette and drapery fabrics in weight. Production of these in both fancy and plain weaves and in various weights is expected to show a sharp rise during the coming season.

All these decorative fabrics have several properties in common. They require no ironing, are dimensionally stable, will not absorb moisture, will not burn, and will not rot.



A shimmering bouclé, glass casement cloth combining the texture of a subtle bouclé with the practicality of Fiberglas. It is available in shades from grey to gold and also in hand-prints, multicolors and monotonous. For decorative and institutional use.

By TITUS BLATTER

PROGRESS REPORT ON CHROMSPUN

Eastman's color-locked acetate fiber has emerged from the chrysalis of research and is now spreading its many-colored wings in new fabric fields. Below are given some examples of the various markets where fabrics woven with Chromspun may be found today.

IN THE APPAREL FIELD, peau de soie is important this season for its soft rich texture and understated luster which is well suited to after-five dresses, evening wear and two-piece suits. Chromspun lends itself to this type of fabric which is finding good acceptance (Bloomsburg).

In jacquards and dobby designs, Chromspun is being used for highlighting decorations and giving brilliant color to fabrics used for after-five dresses and theater suits (Du Barry).

In taffetas, to which new developments have given a sand-like dry touch for the coming season, the luxurious hand and drapability imparted by colored acetate fiber are giving fresh impetus to new styles (Stehli).

One of the most appealing newcomers in both sportswear and separates is a long-brushed jersey, knitted of Chromspun acetate and white viscose rayon. Ideal for resort and college wardrobes, the colors are from the pastel palette (Princeton Knitting).

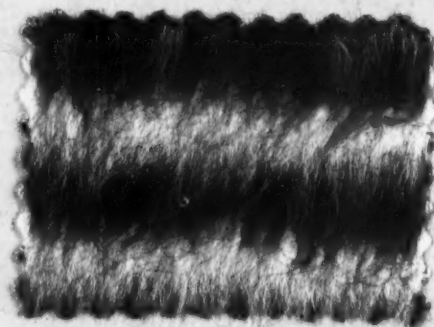
Chromspun-Orlon is found in men's sport shirts. The color which cannot fade is provided by the Chromspun, and the Orlon contributes softness and lightweight warmth. This is an ideal combination, being mothproof and washing beautifully.

IN THE DECORATIVE FIELD, a well-known shower curtain manufacturer has produced a multicolor striped fabric which has a stained-glass brilliance, and which, like old colored glass windows, is not faded by sun or water (Toscony).

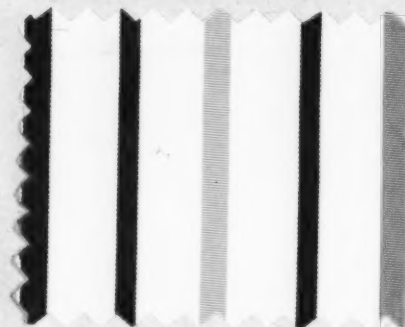
In the picture window, sheer Chromspun fabrics provide fast color and excellent drapability, and bouclé rayon trim lends an interesting decorative motif (Schlosser).

One of the most important fields into which Chromspun is moving is that of patterned damasks for draperies. The colors range from pastels to rich deep tones and the fact that these colors may be employed in a variety of weaves displays the fiber's versatility (Schlosser).

A series of pastel striped fabrics suitable for slipcovers and tailored draperies is being woven of Chromspun. The fiber is particularly recommended here because it can well withstand repeated washings. Everyone who has experienced the fading of slipcovers knows the value of this development (Golding).



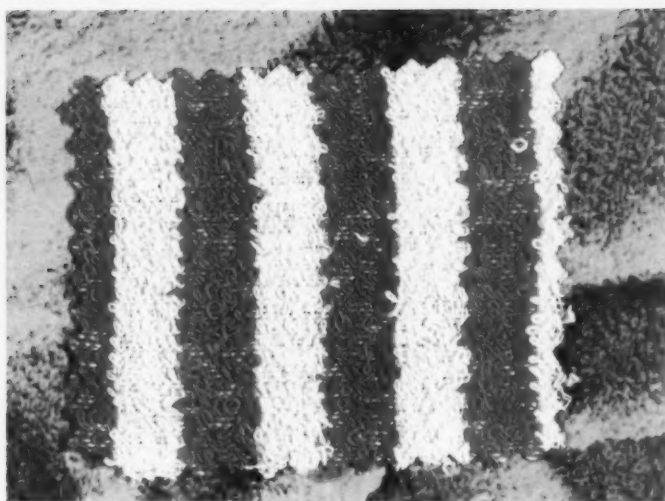
A brushed fabric of Chromspun, white Estron acetate, and viscose.
By PRINCETON KNITTING MILLS



A novelty taffeta of Chromspun acetate warp with Chromspun acetate filling, for shower curtains.
By TOSCONY FABRICS



A novelty weave fabric which utilizes the shimmering Chromspun color to create a delicate effect of mosaic iridescence.
By REGENCY TEXTILES



Super spongy terry cloth. By CONE MILLS

THE METEORIC RISE OF TERRY CLOTH

Where has terry cloth been all your life? Why was it kept under wraps until a very few years ago? Under what bushel was the light of this extraordinary fabric hidden? What were the forces that suddenly propelled terry cloth to fame and fortune . . . as a beach fabric par excellence, as a sports fabric with a marked affinity for coordinates and combinations, as a bathrobe and luxury lounging fabric?

FIRST, LET US BRING you up to date. The story begins in 1855, when an English traveler in Turkey saw women in the harem plucking threads in a piece of cloth by hand so as to raise them into a series of uneven loops. He brought the idea back home with him, and soon textile people in Great Britain had developed machinery to produce the uniform, soft loops which are the distinguishing characteristic of Turkish toweling. Fifteen years later, the first Turkish towel mill operation was set up in the United States, but it struck a snag. For reasons hard to comprehend today, people continued to prefer the old linen *huck* towels. In fact, the terry-loop construction did not begin to win acceptance until World War I, when Turkish towels were purchased by housewives as a substitute for linen. By the time the war was over, it was all over with *huck* towels.

Terry cloth bathrobes were an important item in drygoods merchandising long before the terry towel became standard for the American bathroom. Oldtimers will remember the early terry towel bathrobes with their drab colors and unpleasant habit of constantly unraveling so that the wearer was always covered with straggly, unraveled yarns. That is exactly why

the terry cloth robe practically disappeared from the scene.

Modern mills have improved the processing of yarns and have likewise developed a better-balanced construction which anchors the loops more firmly. Even these essential improvements would not have brought terry cloth back. Only five years ago the terry cloth robe was heavy, bulky, and costly — definitely an item in the luxury class. However, as the terry trend began to make itself felt, the mills began to set up volume operations to make the all-essential popular price a reality.

But what started the terry trend? The Second World War probably had more to do with it than anything else. Our young men by the millions went all over the world and discovered new ways of doing things and new ways of enjoying life. In the European hotels they encountered enormous Turkish towels, and on the European beaches they saw huge beach sheets of terry cloth. This is one of the ideas the G.I.'s brought back.

Bear in mind that the returning veterans came back to a greatly changed America. Beaches were no longer limited to the seaside and the lake shore and the river bank. In towns where there were no beaches, the good citizens built their own

(please turn)

Terry Cloth . . . continued

on the edge of their swimming pools. Therefore, when the new terry cloth beachwear styles came in there were plenty of beaches to give them a thorough workout.

At this juncture, several favorable influences should be noted. French designers had started featuring terry cloth for the beach and sports as soon as the last German was kicked out of their country. Next, the Californians, with their sun-drenched color philosophy and love for splashy prints, got into the act. The color work and the styling of the mills who pioneered the terry cloth development began to open people's eyes.

Demand for Textured Fabrics

One influence, however, played such a preponderant part that it must be especially noted and duly evaluated; namely, the rising tide of textured fabrics, the growing demand for surface interest in the form of hand appeal and eye appeal. Obviously, terry cloth was just what the texture-conscious public wanted, particularly with the technological improvements which came in shortly after. Most widely publicized of these improvements is the Super-Spongy texture developed by Cone Mills for their towels and terry cloth. This new texture technique, aided and abetted by a little inspired showmanship, was unquestionably one of the forces which hastened the national acceptance of the new fashion for the beach and sports.

Since then, the stylists have had a field day, starting with brilliant solid colors and all manner of stripes spreading out next to fancy plaids and prints galore. Soon all kinds of coordinate and combination styles were being noted followed by varieties in the weave. Among these there is even a terry mesh that *breathes* made of alternating stripes and leno.

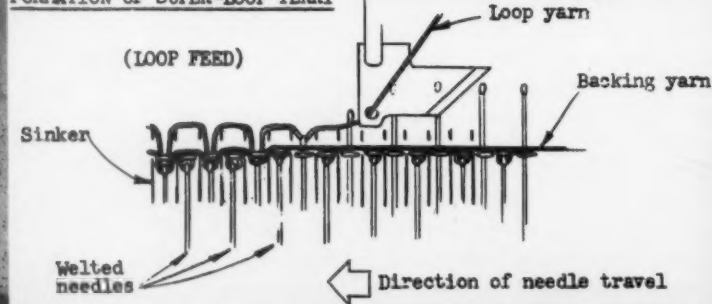
Terry Cloth is Everywhere

Another very interesting as well as most unusual thing about terry cloth was its simultaneous acceptance by men as well as women, not to mention the small fry. The array of terry cloth costumes seen on the sands nowadays is indeed something to behold. This even includes such details as terry trims, and such accessories as shoes and bags, items which have also insinuated themselves into homewear as well as beachwear. Everybody seems very happy about the whole thing.

And have you noticed the prominence of terry cloth by the yard on the piecegoods counters of all kinds of stores in all parts of the country? If not, something in your modern textile education is missing. You'll find it interesting to check up.

Terry cloth has traveled far from the seaside and the lake shore and the swimming pool. You see it in the ball parks, in the country clubs, on the road, and in front of TV sets at home. What's left on the program? Will terry cloth townwear, which some of the leading fashion authorities are beginning to predict, materialize to any extent? You hear some vehement yesses to this idea in smart quarters. It's pointed out that by lining terry cloth you correct the tendency to sag, and you have the makings of an ideal between-season coat; for example, ideal in color, weight, texture-interest, moderate cost, low upkeep, easy care. Be that as it may, you're going to see more terry cloth wherever there is sun and fun, according to fashion people at all levels and in all areas of the apparel field. **END**

FORMATION OF SUPER-LOOP TERRY





An ark curtain designed for the Beth-El Synagogue in Springfield, Massachusetts in colored wool and metallic yarns.

METALLIC YARNS IN A NEW DECORATIVE TREND

AN UNUSUAL NEW ART FORM has been developed, and, as happens so often, this development has sprung from the needs of a house of worship. The new art is embodied in an ark curtain designed by Adolph Gottlieb for Congregation Beth-El, in Springfield, Mass.

The curtain itself is made of wool carpeting, combined with non-tarnishing metallic yarn. Above bold stripes is a valance which combines the ritual symbols — the censer, the candelabra, the pointer, the prayer shawl, the tree of life, and others — into an integrated pattern.

The technique used in making the curtain, with its glitter, fine colors, and depth, gives it all the richness of the East. The valance has been worked in a manner similar to a hooked rug, with a three-dimensional effect achieved by shearing some areas to an almost flat surface, leaving full tufts for a relief effect in others. The glitter is provided by gold and silver metallic threads woven through the black, deep red, white, and yellow of the wool. Spots of other colors pierce the dominating tones with iridescent effect.

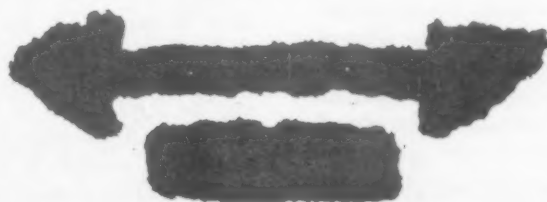
The carpet was woven at the Edward Fields Co., and is a joint effort of Adolph Gottlieb and Richard Miller. Gottlieb blocked out the design on monk's cloth; then Miller pushed the tufts of wool and Metlon (the metallic yarn used) through on Gottlieb's side, from where he directed Miller as if he were a human paint brush, telling him to add a dot of color here, take out another there. The technique allows for greater

freedom and variety; at the same time, it permits the artist to work directly with the craftsman.

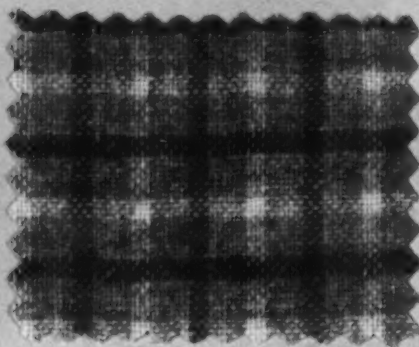
The chapel, too, is decorated with a rug, designed by Robert Motherwell. It will extend from ceiling to floor and under the table holding the Ark. This rug has a uniform surface, its variety being derived from the size of the stitches. The wide orange border is punctuated with the names, in decorative Hebrew script, of the major prophets and the twelve tribes of Israel. Three eagles are flying in a sky of blue and white bands. Large burgundy flowers are scattered on the orange ground, their white borders making a background for the floor area. There, in blue, grey, and white, the Star of David is worked into a geometric pattern. This carpet also utilizes metallic yarns to give added richness.

Of late, metallic yarns are becoming increasingly prominent in decorative fields, ranging from domestic drapery and screen materials to luxurious interior fabrics for the automobile industry. This is a trend which has developed with the growing study of lighting and color harmony in decorating, which makes it possible to use brilliant materials, and achieve sparkling effects without striking a garish note.

This trend may well extend, as domestic decorative styling is more closely studied, into decorative hangings and regular tufted or woven floor coverings.



TWO STABILIZED WOOLEN FABRICS WHICH BEAR THE SANFORLAN LABEL



An 85% wool with 15% nylon, machine washable woven plaid by CARLETON WOOLEN MILLS



An all-virgin, worsted wool, machine washable jersey by LEBANON FABRICS CORP.

WASHABLE
WOOLENS

It is far too late in the game to expect shrinkage-conscious Americans to be happy about garments that shrink. They have been sold the shrink-proof idea right across the board. The facts of the case are that consumer confidence shrivels when fabrics shrink. For years the textile technicians have waged a relentless campaign to conquer shrinkage. For years wool was a stubborn hold-out. Now the shrinkage of worsted and woolen fabrics, even including knit goods, is under control.

THE FOREMOST CONSIDERATION in the shrinkage control of woolens, established by many years of research, is that no one process of control can effectively cover the whole field, including all the diverse types of wool staples and yarns used in the industry.

For example, fabrics made with short staple wool and open construction cannot always be treated effectively against felting or progressive shrinkage by chemical modification, because this sometimes results in a weakening of the fabric. In this type of fabric a form of additive impregnation generally yields the most satisfactory results. But if an additive process is employed to treat a fine combed worsted construction, for example, it is inclined to modify the hand and tailoring properties. In such cases a chemical modification treatment represents the optimum. Also some production needs a batch treatment, while others require continuous operation.

Various Washing Methods

Another complication is the multiplicity of methods used in cleaning woolens, from dry cleaning and careful handwashing, to rough-and-tumble with the family linen in the home washing machine. Washing machines vary greatly as to instructions for use, and with them a whole galaxy of water-softeners, detergents, and bleaching agents can be employed.

Recently there has been a response to this situation among the manufacturers of machines, who realize that they have in wool an important consumer commodity; and some have begun to issue special instructions and even to fit special controls. But so far they have not agreed among themselves on any standardization of settings.

Research on shrinkage control for woolens has been in progress more than thirty years, by organizations in this country and in Britain where there is a long tradition of wool processing. During World War II the U. S. Government became deeply interested, and the Quartermaster Control Laboratories were set to work on active research for the control of felting and shrinking in every type of woolen article. Tests showed that such control prolonged the life of all types of garments. At that time the Government's thinking was ahead of the industry.

As war purchasing diminished, the industry transferred to

civilian production all the know-how that had been acquired, and concentrated its work on new developments for the apparel market. As a result of continuous intensive research over a period of years, two of the most experienced firms in the industry, Cluett Peabody in the U. S. and Wolsey-Stevenson in Britain, evolved processes applicable in one or another aspect to every type of woolen goods. It is these processes which are now being placed before the consumer under the tent trademark of *Sanforlan*. This name covers chemical treatment by two different processes applicable in different cases, and by one additive impregnation treatment. Taken together, they offer under one name and with the backing of the reputation of the Sanforized trademark a new advance in making woolens acceptable to every class of consumer.

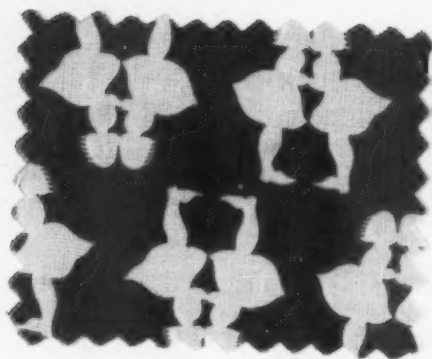
First promotion results of *Sanforlan* labeled goods have shown that the public is hungry for woolens treated by a satisfactory shrinkage control process. Certain stores all over the country, and even in the South, ran promotions of the *Sanforlan* tag on a group of over-the-counter fabrics during the spring, continuing through June, July, and August of last year. The sales were phenomenal, more goods being sold than even in winter promotions previously.

In evaluating this, it must not be forgotten that all types of year-round weights have increased in popularity and that this applies to woolen goods equally with cottons and other lines. After making allowance for all such factors, the trend indicated for woolens is still a highly encouraging one.

Accepted Standard Needed

It has become an accepted truism that the sincerity of the processor is the most important part of the process. Although there is today no shrinkage control standard recognized by the industry, some leading minds in the industry are striving, through a number of committees, to reach an agreement in their thinking. For the moment the standards adopted are those Cluett Peabody find reflect consumer experience.

Cluett Peabody is likewise doing pioneer work both in policing the application of their processes and in educating the consumer. Apparently it is their intention to carry on the same successful procedure that put over *Sanforized* for cottons. This would be a most impressive repetition of textile history.



Rippletex all-cotton fabric with matelasse effect created by a Bellmanized process which gives an additional dimension to the fabric.
By H. M. KOLBE Co.

NEW SCULPTURED EFFECTS IN COTTONS

A process that offers the trade an opportunity to promote starchless cottons which have sculptured effects permanently sealed into the fabric, widening the range of their fashion possibilities.

FINISHING IS NOT a new art. The record of its processes for the refinement of textiles goes back beyond the fifteenth century. In St. Gall in Switzerland, there is a beautiful stained glass window, dated 1673, which depicts in color the art of finishing linen as then practised.

Cotton fabrics came later and brought with them a need for new methods in finishing. These were developed slowly and indeed made limited progress until the genius of Mercer produced the process known today by his name — mercerization. This, briefly, consists of the use of an alkali which first shrinks the fabric; then the fabric is re-stretched and the well-known luster of mercerization is produced.

Lessons learned through mercerization led, later on, to experiments in which these same alkalis were combined with certain chemicals. It was discovered that cotton, when submitted to two such agents, underwent basic structural changes. Still cotton, it became a new type of fiber, altogether changed in its characteristics. The first perfect results yielded a transparent glass-like yarn, round, smooth and of great tensile strength. It was further found that the results produced by the process were not temporary, and that these qualities were impervious to washing.

Still later, it was discovered that variations of the same result could be accomplished by variations of the method used.

Such were the rudimentary steps in the process which led to the patenting of Bellmanizing.

From Ordinary to Unusual

In Switzerland, where many of the modern textile finishes had their origin, this process is referred to as the ennoblement process, because it takes a cotton fabric in its humbler form and transforms it from the ordinary to the unusual. In fact, it often completely changes the physical properties as well as the appearance of the fabric, making it more desirable and, in all cases, adding to the practical qualities of the fabric. The more familiar term for this process in this country is permanent finishing and, as such, it is best known in connection with finer organdies for which it was originally perfected.

However, this fundamental principle of permanent finishing has been carried much further. It was discovered, through scientific research, that it was possible, under the same general method

differently handled and controlled, to permanent-finish other fabrics to give them a new quality, and fashion significance.

In this way six different processes have been perfected for a wide range of fabric applications:

1. A transparent, crisp organdy finish.
2. A modified crisp transparent finish usable for lawns or muslins.
3. A soft, sheer, transparent challis finish.
4. A slightly crisp linen finish.
5. A soft transparent linen finish.
6. A wool finish for cottons.

This variety of results is achieved by the manipulation and timing of the one basic process with the use of different chemicals.

By this same process, surprising effects are produced through chemical printing whereby patterns are achieved either in white, or tone over tone effects. The crinkle or blistered cottons with alternating soft and stiff effects are produced in a similar manner. The crisp effect is permanent, and in washing such goods, no starches are used and no ironing is necessary. The cloth is merely stretched out by hand.

Many of these crinkled and seersucker effects are only otherwise possible through creping and gathering of the fabric in weaving. Achieved through the Bellmanized process, they are just as definite and exactly as permanent as if woven, and they need no starching nor ironing.

The fashion significance of these finishes rests on the fact that, in giving the dress producer a finer cloth with which to work, it encourages the use of cotton in more fashionable things which, as a rule, have not been made of cotton.

Other new texture and surface effects are in the experimental stages. Textile technicians are constantly engaged in research and, while they do not venture to predict the exact time when all cottons will be finished by this or similar processes, they may well take pride in the permanent establishment of new and higher cotton classifications, wherein cottons compete for customer attention on the basis of the lasting qualities of their texture and their styling. **END**



*You are going to swat a fly; it comes and sits on the
fly-swatter itself: what will you do in such a case?*

— ZEN MONDO

PHOTO, PETER CLARK



*When you meet a master in the street, do not speak,
do not be silent. Then how will you greet him?*

— GOSO'S MUMONKAN

The Construction of Today's Textile Mill

Acknowledgment is made to the Daniel Construction Company for material used in the preparation of this article.

WHEN THE TEXTILE MILLS originally moved out of the home and the craft shops into the first industrial plants, the design of these plants was governed by the conditions of the times. There were two important conditions which basically determined plant design. First, the source of power at that time was water power; consequently it was necessary to locate the plants close to suitable sources of water and to place the plant in such a manner that the water wheel could deliver power to the individual pieces of equipment through a central shaft.

Since the locations where water flows swiftly were locations that were usually long and narrow along a rocky, narrow stream bed, it was logical to build plants that were long and thin to fit the contour of the land. Plants so designed permitted the shafting to be strung along the mill and thus deliver power from one central source. Since more space was usually needed than could be provided on a single floor, these plants eventually became multiple-story buildings. Through a series of belts or gears, power was distributed to the various floors.

Before the days of elevators, block and tackle and manpower were used to carry material between one floor and another. Another factor of the time which governed the design of the mills was the absence of satisfactory artificial light. All work was done by daylight, and the hours of work were governed by the length of effective natural light. Thus it was necessary for plants to be narrow so that light could reach the innermost machines from windows on the outside. When it was desired to make a plant wider, it was necessary also to make each floor correspondingly higher so that light could still reach the interior.

When steam power was developed, the proximity to large bodies of water was not so essential, although water was still required for the boilers, for cooling of the engine, and for condensing. The electric motor brought still more design freedom. The electric light made it possible to spread plants out considerably, although without satisfactory air-conditioning the totally enclosed one-story plant of today's design was still impractical. Since ventilation was necessary many months of the year, the multiple story plant was still valid.

Besides air-conditioning and the fluorescent light, one major development was required to make the modern mill a practicable reality. This, strangely enough, was the bulldozer. Without the bulldozer and other earth-moving equipment, it would not be economical to clear the vast areas of ground necessary for the modern one-story mill, several of which have covered as many as fourteen acres on a single one-level floor, under a single roof.

The next step in design may well be Buckminster Fuller's multiple-story manufacturing sphere. There are, however, several problems which still must be solved before such a plant will become economically practical.

The key to the economics of the textile plant is labor. All pieces of equipment will have to be run far more automatically in the textile mill of the future than is possible today, with present equipment and work standards.



OLD SLATER MILL

One of the earliest mills established in operation in this country was the old Slater Mill in Pawtucket, Rhode Island. There is no question that Samuel Slater furnished the inspiration and models from which were developed all modern cotton and other textile mills. Yet Slater himself would have been amazed could he behold the plants which represent that development today.

TEXTILE MILLS of America present an interesting phenomenon of America's growth in industry

AS EXAMPLES OF the imposing variety and size of the mills in this country, AMERICAN FABRICS presents a view of two mill operations widely different in their contribution to the textile industry.

Native Laces and Textiles, Inc., is the parent company of six manufacturing mills located in New York, New Jersey, Pennsylvania, and Connecticut. Its president, Leon Birnbaum, started in the lace business fifty years ago, this year. At that time, the domestic manufacturing industry in the United States was in its embryonic stage, and only about 5% of the lace consumed was made domestically; therefore, the importation of merchandise was of great importance.

In 1929, the Native organization assumed its significant role in the domestic manufacture of lace. Since that time, through many expansions, and with a productive area of over 300,000 square feet, a payroll of 400, and a lace production alone of about 5,000,000 yards per week, it has become by far the largest lace producer in the country, possibly in the world.

Native Laces and Textiles, as the parent company, does the selling job for its six producing mills. The company itself



The Native Laces and Textiles plant at Wilkes-Barre is the most modern in the world for the manufacture of lace and tricot fabrics.

consists of five divisions: lace and netting, tricot fabrics, elastic fabrics, shoe mesh, men's wear. While each division is uniquely responsible for its own products, all divisions make common use of the several divisions' manufacturing equipment.

The machinery now in use includes seventy-six Leavers lace machines, one 142 tricot warp knit machine, a group of embroidery machines, and a variety of finishing equipment. In addition to the work produced by this machinery, which at times is insufficient for Native's sales potential, work is done on a contract basis by machines in other mills.

The lace division produces and ships approximately 250,000,000 yards of lace per year, or approximately 5,000,000 yards per week.

The knit goods division produces approximately 13,000,000 yards per year, or approximately 270,000 yards per week. Substantial quantities of elastic power net and nylon shoe mesh for men and women are also produced. The yarns used include cotton, rayon, acetate, nylon, Dacron, Orlon, and worsted. The lace division alone uses 556,000 lbs. of yarns per year.

Two dyeing plants, equipped with the most modern dyeing and finishing machinery, are not only able to cope with Native's entire grey production, but handle as well the grey goods of many outside mills, the finished merchandise of which is also sold by Native.

(please turn)



ABOVE: Part of weave shed at the Wilkes-Barre plant, showing, at rear, a row of fourteen Leavers machines in operation.

BELOW: Another part of the same plant where banks of tricot machines are in operation in an air-conditioned shed.



President of Native Laces and Textiles, Leon Birnbaum, has been active in the lace business for over fifty years.



Textile Mills in America . . . continued



*Mr. James C. Self
President*



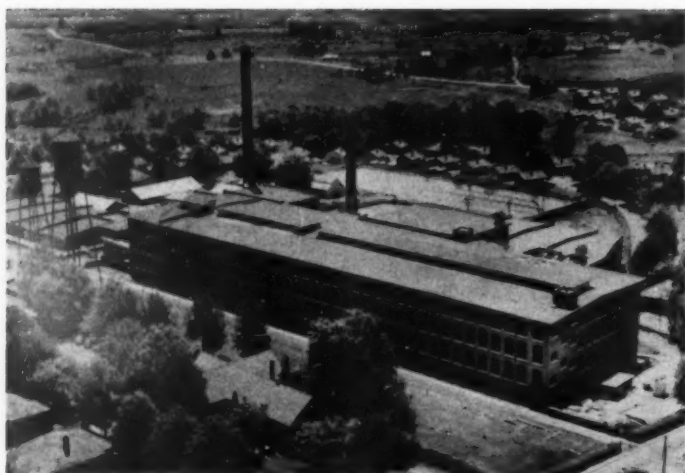
*Mr. J. B. Harris
Vice President*



*Mr. James C. Self, Jr.
Treasurer*



*Mr. John B. Harris, Jr.
Ass't Vice President*

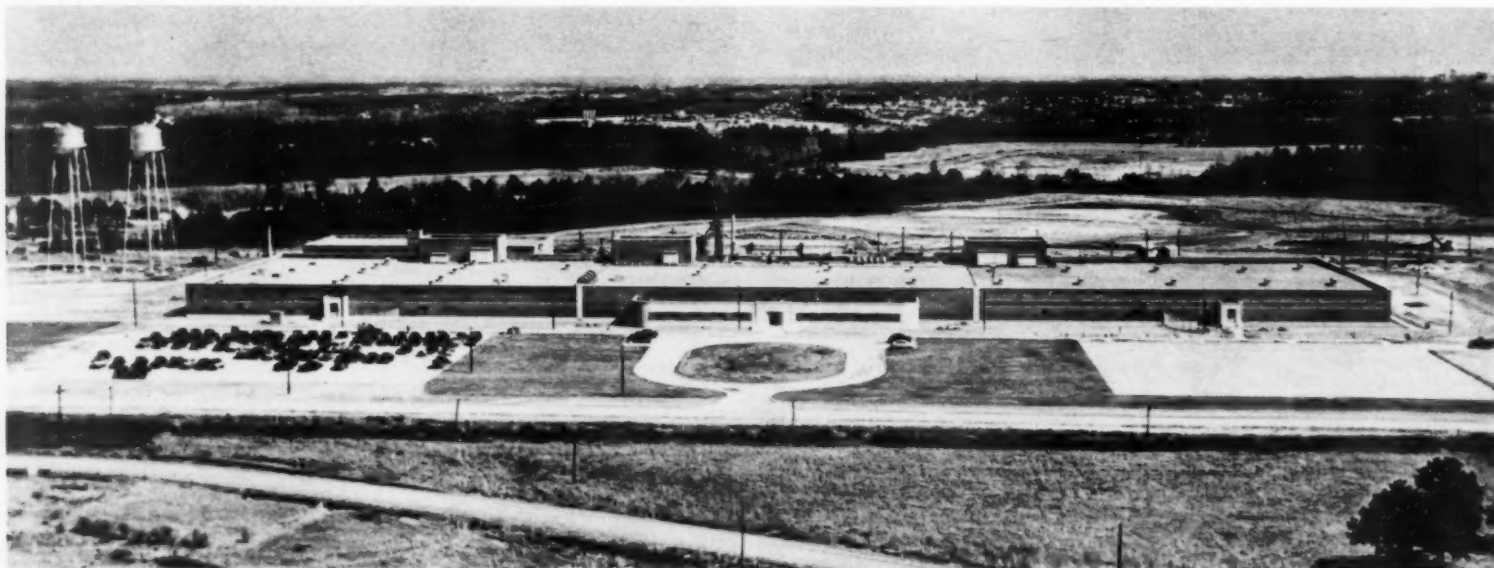


The Ninety Six Plant of Greenwood Mills at Ninety Six, S. C.

THE STORY OF GREENWOOD MILLS *is the story of men . . .*

THE STORY OF GREENWOOD MILLS is the unique story of a man at the center of a community enterprise. The first Greenwood plant was constructed in 1890, with capital supplied by local businessmen. Much of the first stock issue was sold on the installment plan. Like many other pioneer mill operations, the Greenwood Mill struggled through hard times and ran deeply into debt. The upturn in Greenwood's fortunes was effected chiefly through the genius of James C. Self, who began his career as an eight-dollar-a-month clerk.

Entrusted with a position of authority in the mill, Self realized that Greenwood would be unable to compete with



The Harris Plant of Greenwood Mills, at Greenwood, S. C., was completed recently at a cost exceeding \$6,000,000



The Mathews Plant of Greenwood Mills was purchased in 1930 and has been modernized since the war at a cost of \$5,000,000

other organizations unless it modernized its equipment and adopted a responsible employer-labor relationship. He secured new machinery and automatic looms on credit or in exchange for stock; he modernized the company's employee policy and constructed model communities for the plant personnel. In a few years, after taking over management of Greenwood, he had doubled production and at the same time effected a substantial operating profit on the mill's output.

Under Self's direction, Greenwood's expansion has been continuous. Since the end of World War I, the mills have consistently operated on a three-shift basis. In 1921, the Company acquired the *Ninety Six* plant; in 1930 it bought the No. 2 plant of Grendel Mills and renamed it *Mathews*. Since the last war more than \$5,000,000 has been spent on modernization, including \$2,500,000 for new looms and \$1,000,000 for spinning equipment. In the same period some \$4,000,000 was invested in improvements of the Greenwood and Ninety Six

plants, the latter being changed over from carded to combed cotton yarn operations.

An expansion and modernization program, involving an outlay of more than \$20,000,000, has been recently completed by Greenwood Mills in South Carolina. The organization now operates four of the most highly efficient mills in the cotton and rayon industry. The present enterprise, which is home-owned, involves the productive capacity of 5,000 looms and some 200,000 spindles. The newest unit of Greenwood Mills, known as the Harris Plant, is a \$6,000,000 project located outside of Greenwood in a community which was formerly Cothran, S. C., and which has been renamed Harris, in honor of J. B. Harris, vice-president of Greenwood Mills and chairman of the board of Greenwood Mills, Inc., New York selling agency. Planned for the production of a variety of fine filament rayons, this plant manufactures satins, taffetas, suitings, and underwear fabrics.

END



Above is seen an aerial view of part of the Greenwood Plant, at Greenwood, S. C.



Sketch of James Spencer Love

CHAIRMAN OF THE BOARD OF BURLINGTON MILLS

IF YOU EVER HEAR that Joshua Logan or Lindsay and Crouse are putting on a play about big business, make up your mind right now that no one even remotely resembling J. Spencer Love will be cast for the part of Chairman of the Board of a multi-million-dollar corporation. Everything about his appearance and manner belies the storybook concept of the Captain of Industry. He never says anything with an eye toward the press; is never in the limelight. If you expect outward and visible signs of the dynamic character within, you will be completely disappointed. The head of Burlington Mills is not only modest and self effacing, but downright diffident and shy. And it isn't an act either; it's the man himself.

This is not the story of one who came into this world with a golden spoon in his mouth, nor is it the dear old Horatio Alger type of narrative. The central character never appeared in the capacity of poor, underprivileged foundling or sole support of a bereft mother. Spencer Love (the James is usually silent or relegated to an initial) inherited an excellent set of immediate progenitors and received what he claims to be the best education you could possibly get — Cambridge Latin School and Harvard, Class of 1917. This complacency about his education is by no means an exclusive characteristic of the man but indigenous to the soil of greater Boston.

Don't let the southern origin of the family or the pleasant North Carolina drawl fool you; scratch the surface, and you'll

A few of the seventy-one plants operated by Burlington Mills.



Fayetteville Plant



Wake Plant



Lakewood Plant



Altavista Plant



Roanoke Plant

FROM A SMALL MILL IN A SMALL TOWN

find at least 50% proper Bostonian. If you don't know the land of the Sacred Cod, remember that Cambridge is super-Boston and that Spencer Love's father was one of the topflight Professors of Mathematics at Harvard. Such a background may very well have more to do with success in the textile business than being born into the possession of a capacious commode full of tin.

Be that as it may, Spencer Love seems to have acquired the success habit early in the game. He was one of the youngest majors in the A.E.F. during World War I, a conflict in which 22-year-old officers of field rank were not conspicuously plentiful.

With a citation from General Pershing in his pocket, he returned to Cambridge after the war, but he was not to finish his work at the Harvard Business School, where he had spent a year before putting on puttees. It is only a two-year course at this school, but, as Love wrote in the twenty-fifth anniversary book of his college class, the excitement of army life and overseas experience made him unwilling to settle back into student life.

If at this point you had cared to inquire in Cambridge which of the young men looking for a job was least likely to become one of our great industrialists, young J. Spencer Love would have received an impressive number of votes. What made people sell him short? The answer is that in a certain very definite sense he sold himself short, and still does.

Educational Activities

In a recent interview, Love was asked if he did much work for the various educational institutions on whose governing bodies his name is listed: University of North Carolina, Davidson College, North Carolina State College, Harvard Business School. Oh no, he didn't do very much, was the reply in a modest tone of voice, which implied that he only wished he could do more. The interviewer was not impressed, having been told a few days previously by Donald K. David, Dean of the Harvard Business School, that Love was one of the most effective men on his Visiting Committee and had rendered Trojan service in fund raising. You get the same story all along the line. Love doesn't fool around; but he also refuses to take bows.

It is a case of modesty amounting to a consistent campaign of self depreciation, and such an aversion to parading accomplishments in public that he will go to the extreme of denying them. This, again, is not only typical of Love but of most of the people who are brought up where the Charles River flows.

The first job that opened up was in his father's home town, Gastonia, North Carolina, in a cotton spinning mill. "Opened up" is probably not the right phrase. Ten to one, Spencer Love



ABOVE: Burlington Mills' first plant located in the Piedmont Heights section of Burlington, N. C., photographed in 1927. BELOW: An original letter of recommendation at the inception of Burlington Mills.

CHARLOTTE, N. C., November 6, 1923.

Mr. L. S. Moody, Sec.,
Chamber of Commerce,
Burlington, N. C.

Dear Mr. Moody:—

Answering your inquiry of the 5th about Mr. J. Spencer Love of Gastonia, N. C., wish to advise that we have a very high opinion of this gentleman in every particular. He bears a splendid reputation with everyone who knows him. His reputation for integrity and also ability is of the highest order. We think very highly of him in every way and have had business relations with him, all of which have been satisfactory. We believe he is capable in his line of business and has made a success since he has been operating the Gastonia Cotton Mfg. Co. We are convinced that you will learn to appreciate Mr. Love more and more the longer you know him.

Yours truly,
W. H. WOOD,
President.

WHW-h

NOTE—Mr. Wood is President of the American Trust Company of Charlotte and is also President of the North Carolina Railroad Company.

forced the opening. What happened then has been told several times so that everybody even remotely connected with textiles has heard how the sum of \$5,000 was parlayed into one of the greatest textile operations in the United States.

The Burlington Mills were founded in 1923. In 1924 they used 106 pounds of rayon, and ten years later Burlington became the largest weaver of rayon fabrics in the United States. Therefore if Robert Taft is Mr. Republican, who but Spencer Love can qualify as Mr. Rayon? And let not the Company's later

(please turn)

N IN NORTH CAROLINA TO ONE OF THE GREAT INDUSTRIAL OPERATIONS OF THE WORLD



Plaid Mills Plant



Greensboro Plant



Franklinton Plant



Greensboro Offices



Cramerton Division



This little building at Burlington, N. C., housed the original Burlington Mills offices and was located close to the Company's manufacturing plant. This picture, taken in 1925, shows the office force, with Mr. Love at far right.

Spencer Love . . . continued

expansion into cotton, wool, and other fabrics, not to mention finished textile products, take your eye off that remarkable rayon operation in a brief span of time.

It is a dizzy experience to read the record of the business that Love put together. In the last eight years sales have trebled; in the eight preceding years they had quadrupled. Latest score card shows sales of 320 millions of dollars. There are 71 plants and 32,000 employees involved in this undertaking. The mills and the men are really "woven into the life of America," as their slogan proclaims somewhere in every Burlington ad. In fact, they have taken a leading part in changing the clothing habits and developing the fashion awareness of the American public.

For example, Spencer Love had more to do with putting the rayon summer suit into your closet and rayon slacks into your golf locker than anyone you can name. To be sure, other mills were ahead of him in launching synthetic suitings, but it was Burlington who made rayon outerwear stick. Forgetting for the

moment the technical headaches involved, consider the gigantic job of publicizing and promoting the idea to thousands who would not be found dead in one of those silly new suits. It was all done in an amazingly short time and with an advertising appropriation that looks like chicken feed alongside the tab the soap companies pick up for getting a new detergent on the shelves of the grocery and chain stores.

How do you put a show like this on the road, and keep it there? Obviously it takes a prodigious amount of drive, which spends itself in an eleven-to-twelve-hour work day, according to associates. Spencer Love is not the only man in the world who eats, lives, and breathes his business, but everything he does or thinks about seems to stem from it. He is interested in schools and colleges because they train for business; he is interested in the government because of its effect on business. He is devoid of extra-curricular hobbies, and small talk for its own sake is something totally foreign to his nature. After a few pleasant and polite



remarks, he wades into the subject at hand and you find yourself stating your case. And remember, it's *you* who'll be stating the case, not Spencer Love. He's a professional listener.

For all his courtesy and consideration, an invitation by Spencer Love is not received with unmixed delight by Burlington people. They're on the same spot as the ball player who's invited to the Casey Stengels' or the violinist with a bid to the Mischa Elmans'. No one needs to be briefed on the topic of the day.

Mrs. Love is not immune to the treatment. The Loves may have aisle seats in the fourth row for *Wonderful Town* and may be all dressed for the theatre; but suppose the conversation with the man from the office brought along for dinner unexpectedly takes an interesting turn ten minutes before curtain time. That's easily arranged, as always with the utmost courtesy and consideration — one of the sons or some other qualified individual is asked to substitute at the theatre. Surely, Mrs. Love won't mind, especially since Mr. Love will join her right after the first act. His actual arrival at the theatre may depend upon the number of acts, but he is pretty certain to get there before the finale. That's what happens when you are impelled by a merciless, relentless, driving force that knows no abatement.

Anything even vaguely akin to rest and relaxation in the accepted sense is entirely remote from the Love pattern of living. About a year ago he went to a hospital for a complete checkup and was given a clean bill of health. Since this type of checkup involves endless hours of thumb twiddling between tests, one of the doctors suggested that the patient could relax between sessions in a deck chair on the sunny roof of the hospital. He relaxed all right — they found him later dog-trotting around the roof like a candidate for the long distance team. In this connection, note that the patient was born in 1896.

The Competitive Spirit

What's all the shootin' for? Why the terrific pressure? Certainly not for money; there is surely enough of that. Certainly not for titles or degrees or honors, which the recipient would hide out of sight as fast as they were received. Asked point blank recently, Spencer Love vouchsafed four explanations off the cuff. They are quoted as nearly verbatim as possible:

1. The challenge of competition.
2. The desire to keep your organization on top.
3. The personal satisfaction of accomplishment.
4. The desire to improve yourself.

All four are perfectly worthy and honorable reasons. They are also highly revelatory, because they all can be boiled down to one word: competition. Even the desire to improve yourself may be fathered by the urge to become a keener competitor.

Notice also that when asked to tell what made him tick, Spencer Love did not pontificate. He just stated very simply what the score was. No one who has ever played cards or tennis with him is ever in doubt about that competitive instinct. The man is out to win, and he hates to lose. He wants to win every time and in everything he does. Sometimes the gracious acceptance of a setback, in the best Southern and Cantabridgian traditions, must be equal to the task of concealing discomfiture and chagrin.

Spencer Love is a man of many contrasts. Lean, spare, and rather slight of build, he is strong and tough enough to play alongside Johnny Van Ryn against championship competition at the Everglades Club. Every inch a true Southerner, he is also a Puritan who does not smoke and drinks only to avoid an issue. Never known to raise his voice or *chew out* a subordinate, he is as tough and hard a man as ever got into a hassle.

Demand for Performance

Does he drive others as hard as himself? Perhaps not directly, but he is, as one of his close associates puts it, a confirmed performance-demander. In this department he is inexorable. If you

work for him, you deliver. His attitude seems to be that of the commanding general in time of war: attain the objective or get shipped back home. Or, as another textile leader once put it to a man whom he was sending out on a crucial sales mission, "Don't come back without the order."

It was in the New York end of the business that the textile battle of the century was fought, when Spencer Love decided to switch from a grey goods operation to the manufacture of finished goods. For Burlington this meant the expansion of outlets from a handful of converters and other big users to the present customers' list of some 13,000. It meant buying mills like Cramerton, converters like Duplex and Concordia Gallia, selling agencies like Galey & Lord. One gets an idea of the inevitable confusion from the fact that at one time Burlington Mills had nine advertising agencies working for them, one of their own choosing and eight inherited with the various textile properties purchased here, there, and yon. It requires no great imagination to visualize the resulting personnel upheavals.

Conviction in Methods

The textile battle of the century still goes on in theory. There is a strong school of thought in the market that Spencer Love's finished goods operation could never survive a price recession, let alone a full scale depression. Try that argument on him and you will be poo-pooed all over the lot. He will even come close to raising his voice when he challenges you to explain why an exception should be made for the special benefit of New York City to the marketing methods that govern eighty percent of the world's textile operations.

The insistence upon performance without excuses translates itself ultimately into the amazing technical proficiency of the various component parts of the Burlington producing organization. Outside finishing plants which have processed Burlington goods have a tale to tell about the rigors of Burlington inspection. Even the finest and most efficient of the mills which have been absorbed into the organization have been amazed at the prodigal sums lavished on them to achieve the best possible ends, not to mention impressive technical personnel assigned to help them. The goal is to make the best fabrics that can be made for the purpose and for the price.

An intense and burning conviction that he is as right as rain and is fighting the good fight for a better America, as well as a better Burlington, underlies every action. The man may sell himself a bill of goods, but he would never knowingly do something he thought was wrong.

In 1942 Spencer Love wrote in his class book, "My experience in politics and other phases of public life is nil." The next year he was Director of the Textile, Clothing and Leather Bureau of the War Production Board. Subsequently he has served on the Business Advisory Council of three Presidents of the United States. No one ever had a profounder belief in America and especially in the importance of American business. That's what business schools are for, and technical schools, and colleges — to train better business men to make business better. He is not worried that America has never produced a great epic poem.

Outside of the vast scope of his business and official interests, with their innumerable collateral ramifications, Spencer Love lives for one thing: his family. It is nothing for him to get to work as early as seven-thirty in the morning in order to find time for the children (he has six sons and two daughters) later in the day. Devotion to family life and especially to children is graphically illustrated by the Christmas cards which, year after year, feature the smiling faces of the tribe. He's probably got the photo for the 1953 Christmas card carefully tucked away in his desk drawer right now.

END

Rare fabrics from the collection
of the Cooper Union Museum



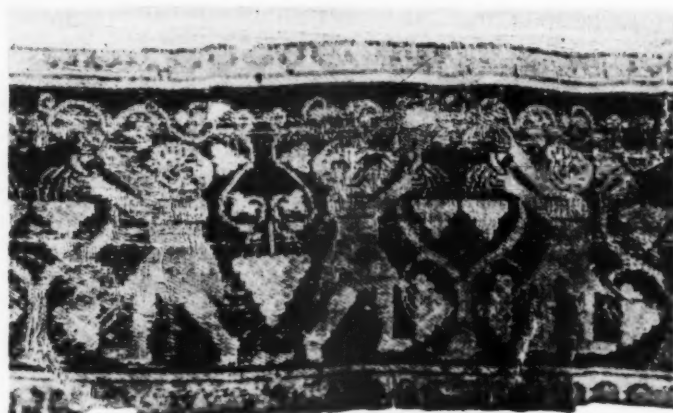
Double satin, silk. Spain or Italy, XII - XIII Century



Plain compound satin, silk. Italy or Spain, XVI - XVII Century



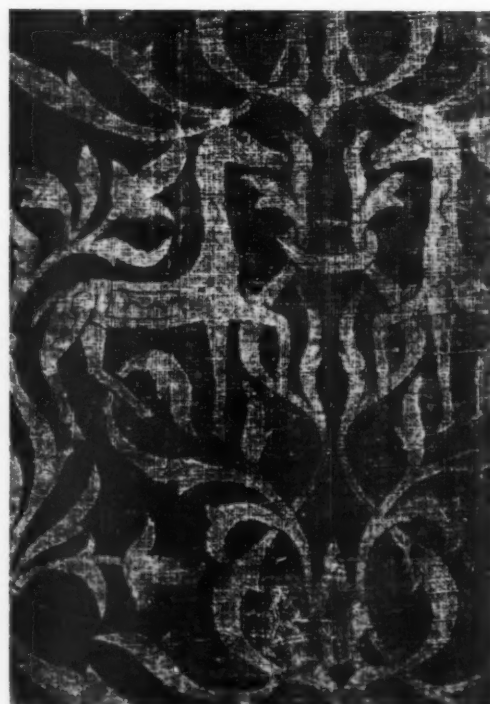
Double twill, silk and metal.
Italy, Lucca, XIV Century



Silk with putti and grapes. Syria (?) V - VIII Century



Plain compound satin. Italy or Spain, XIV - XV Century



Plain cloth, printed linen.
Germany, XII - XIII Century



FLORAL OVAR . . . a stylized flower design with urn, printed on Everglaze chintz and Everglaze lawn. It derives from the decorative flower arrangements used on festive occasions in Ovar peasant homes.

Pahlmann's Portuguese-Inspired Designs
Add a Fresh Note
to the American Textile Scene

ALL FABRICS COURTESY OF CYRUS CLARK CO., INC.

Portuguese countryman in typical costume.



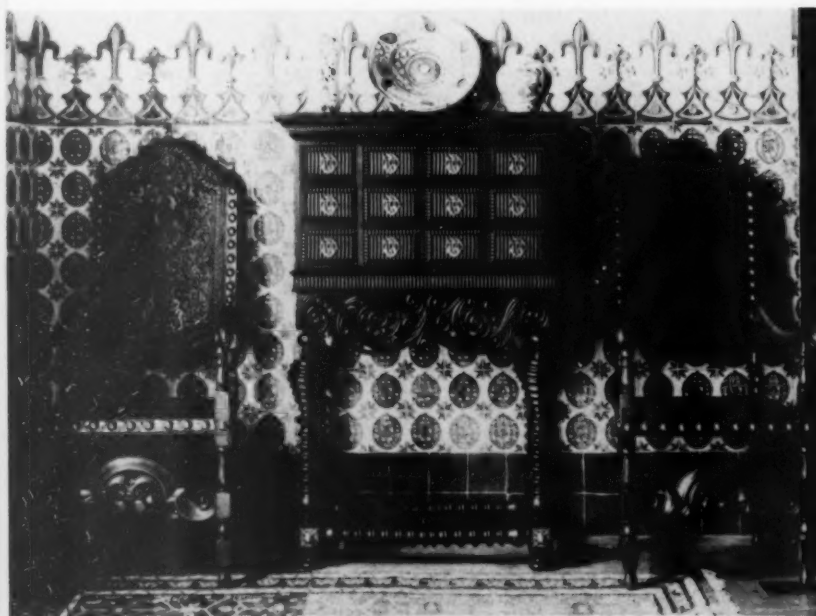


William Pahlmann, interior and industrial designer, is well-known to both trade and consumers in the decorative field. His series of exhibition rooms for Lord & Taylor have had marked effect on contemporary American interiors. He is responsible for innovations in furniture design such as the overscaled cocktail table, the double headboard, mobile furniture on rubber-tired casters, as well as in designs for fabrics, carpets, bedspreads.

Pahlmann in Portugal...

IN THESE PAGES AMERICAN FABRICS brings to its readers a series of pictorial representations of Pahlmann's recent trip to Portugal. The instinct of creative designers inevitably leads them toward places and people that stimulate their creativity. Portugal, until recently, has been by-passed for design inspiration. Pahlmann, who visited there earlier, was quick to realize the design potentialities in Portuguese colorings, architecture, and native art objects. Translation into fabrics that are adaptable to other climates and cultures was a logical consequent of this designer's imaginative approach to consumer needs.

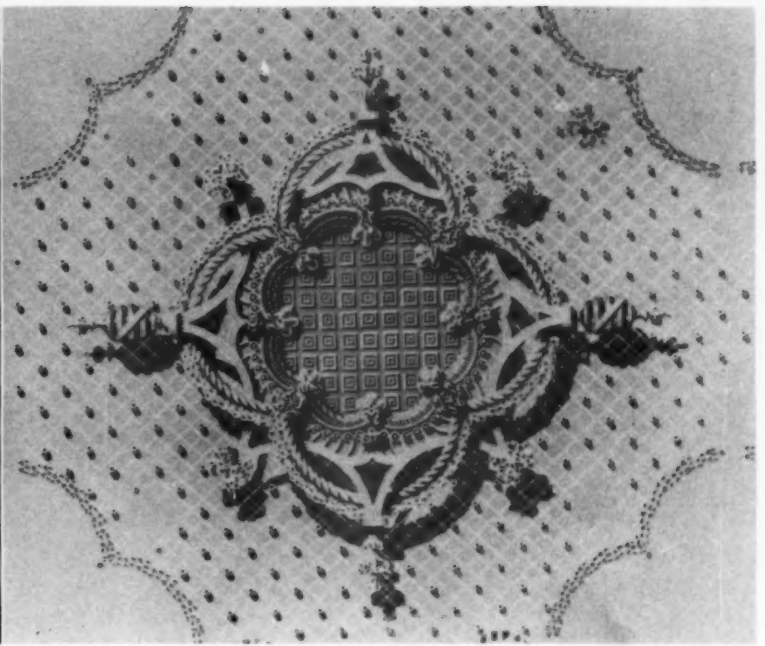
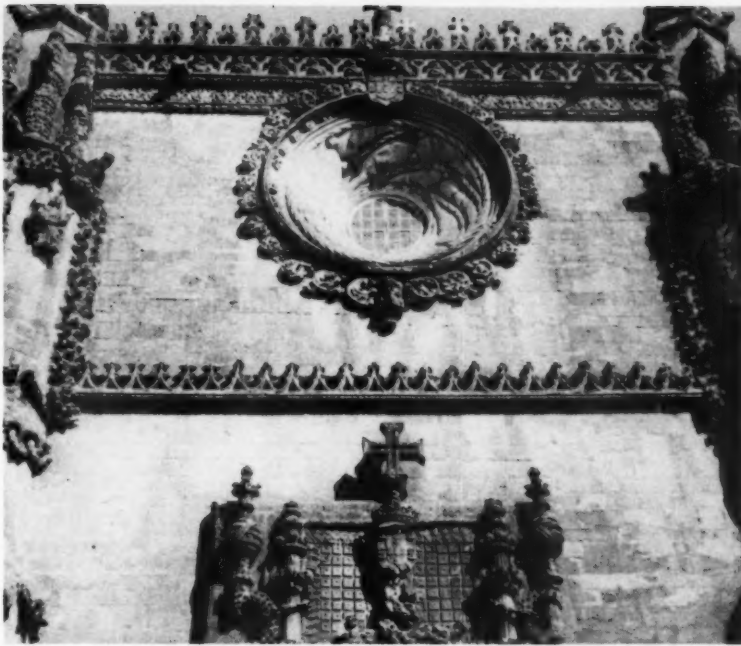
In connection with this truly exciting fabric presentation, we wish especially to point up an important fact. Through American production facilities, high style fabrics of this kind, which were formerly only for the few, are now available for consumers on practically every income level. Every adaptation can be had in a popular price range, making it possible for the average stay-at-home American consumer to enjoy exciting fabrics of authenticity and undisputed charm. This is the basis on which the fashion and fabric industries of our country have combined authority with dynamism, and have expanded and prospered. — C. C.



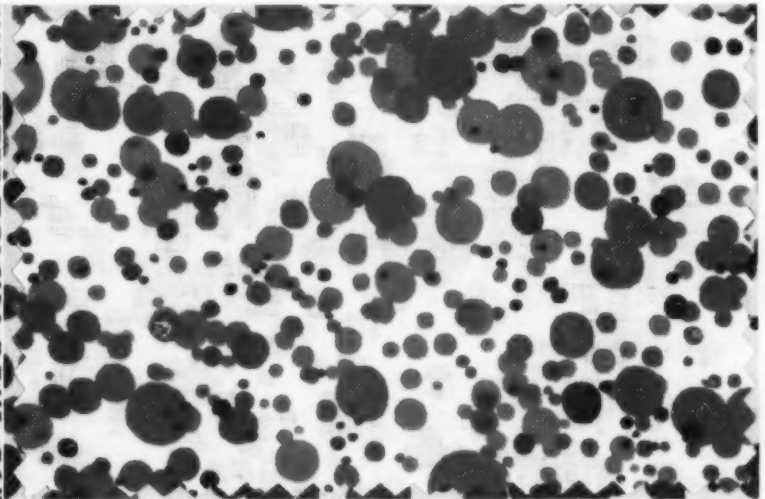
Tiled background is typical of Portuguese interiors.



Old Portuguese tiles from the Palace Fronteira.



Left, above: Tomar, the Manueline Gothic rose window in the Convent de Cristo, set in a frame of lacy stonework. At right, SAN GERONIMO, an authentic print design in Everglaze chintz and Everglaze wrinkle-resistant cotton by Cyrus Clark . . . from a Manueline Gothic motif.



Above, left: BELEM . . . an Indian-inspired print from the Tower of Belem which King Manuel built to commemorate the discovery by Portuguese navigators of the short route to India. At right: OVAR . . . a spatterdash Everglaze chintz by Cyrus Clark, printed in typical Portugal colors . . . from the brightly hued, spatterdashed oxen yokes which are characteristic of the Portuguese scene.



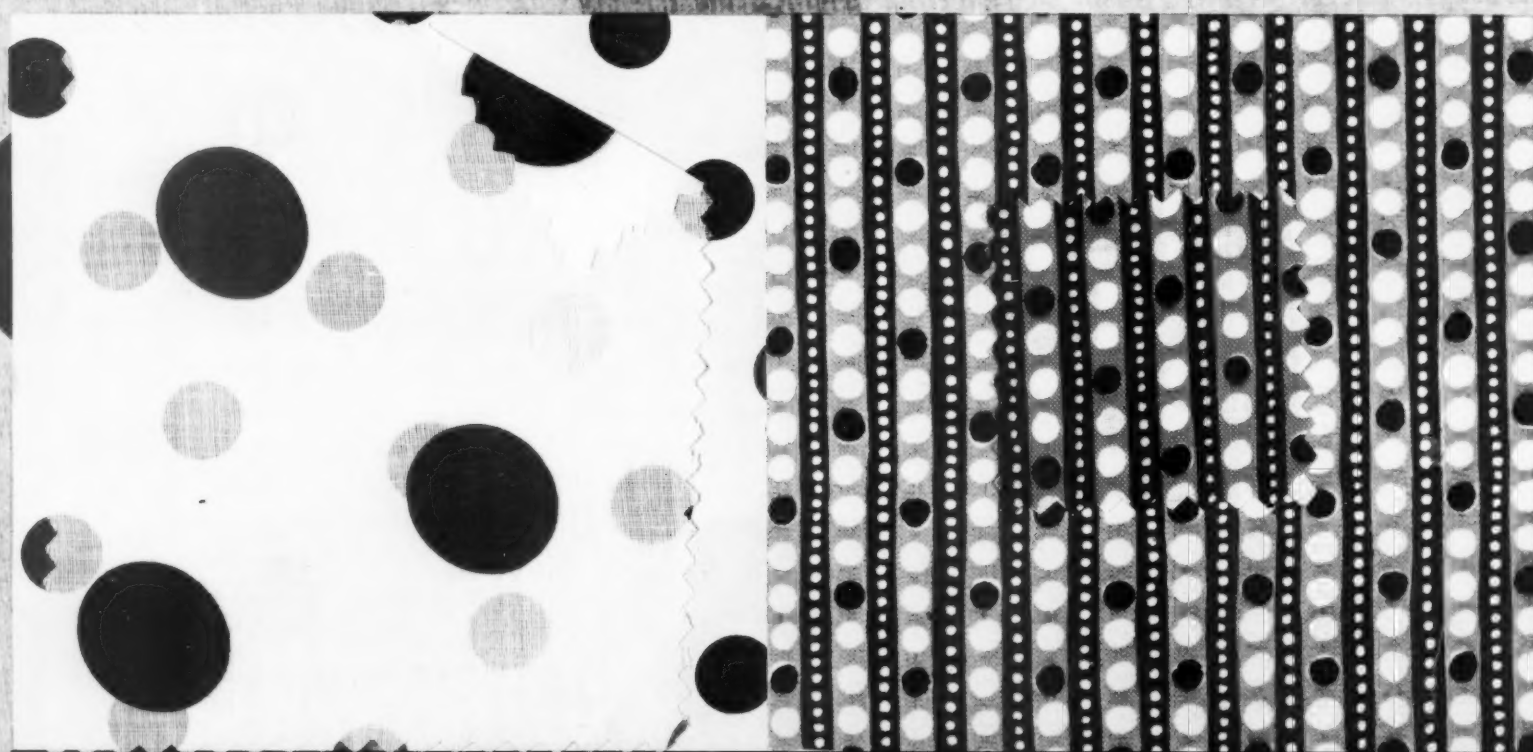
Woman of Portugal.



Fruits arranged by Portuguese vendors.



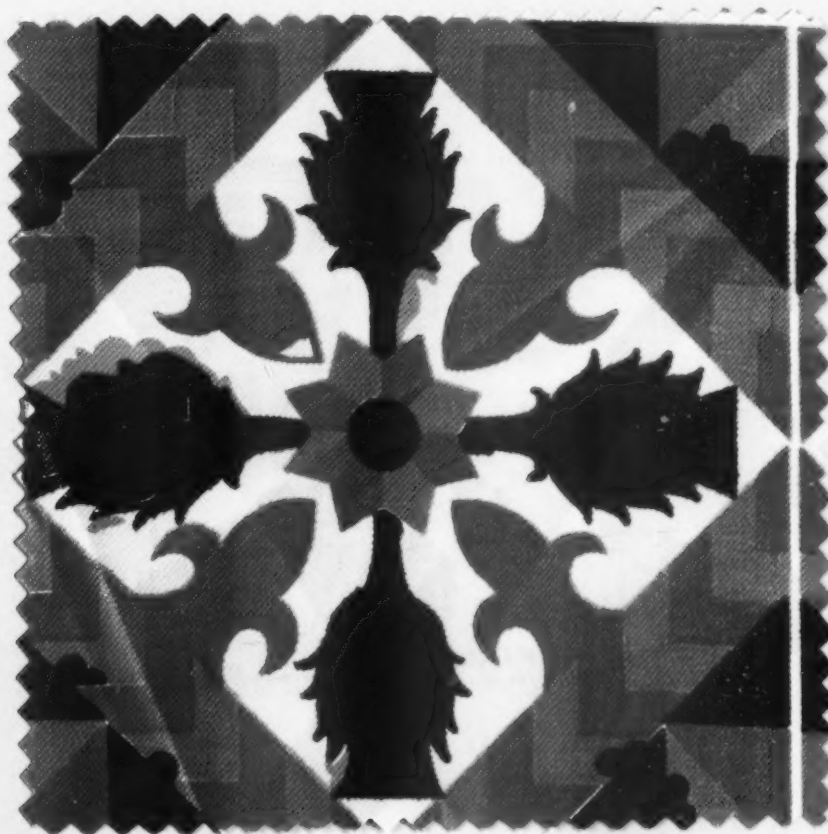
The patient ox . . . ever-present in Portugal.



PAHLMANN'S OBSERVANT EYE was caught by the prevalence of polka dots, a favorite with all classes. The result was a series of polka dot designs, among which is Everglaze's PORTO DOTS (*above left*) . . . a vivid pattern of colors seen in Oporto, Portugal's second city noted for its Port wine. COIMBRA, a small dot-and-stripe pattern (*above right*) was adapted from a peasant blouse seen in the ancient seat of learning by that name.

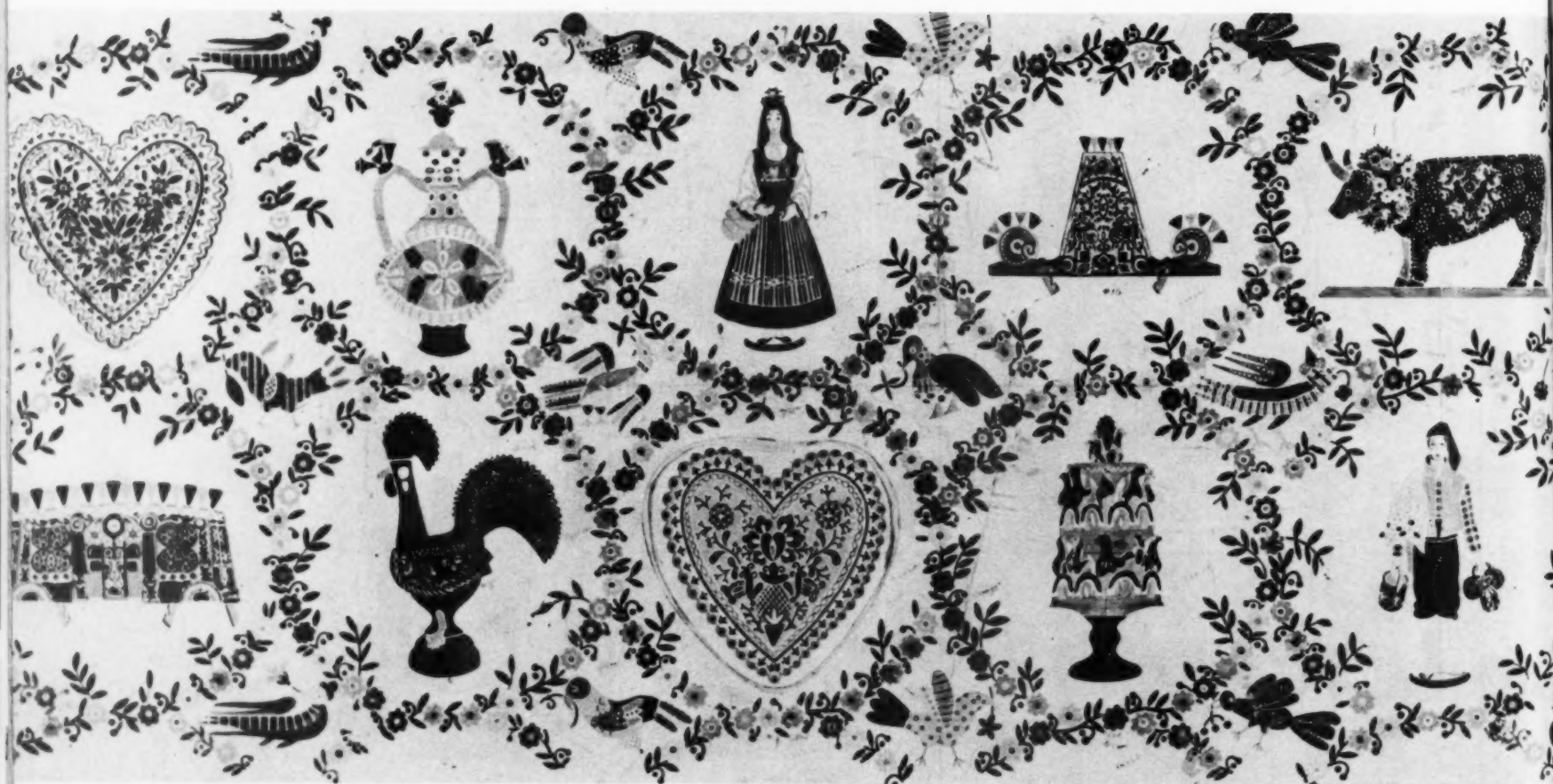


TILES ARE an integral part of Portuguese life. Pahlmann designed this Everglaze *Midus Cloth* print, which he calls SINTRA, from a 16th Century Moorish tile found in a villa in Sintra, famous watering place near Lisbon. The photographs of the tiled fountains were taken at the Royal Palace of Sintra.



PAHLMANN in

PORTUGAL ...cont'd

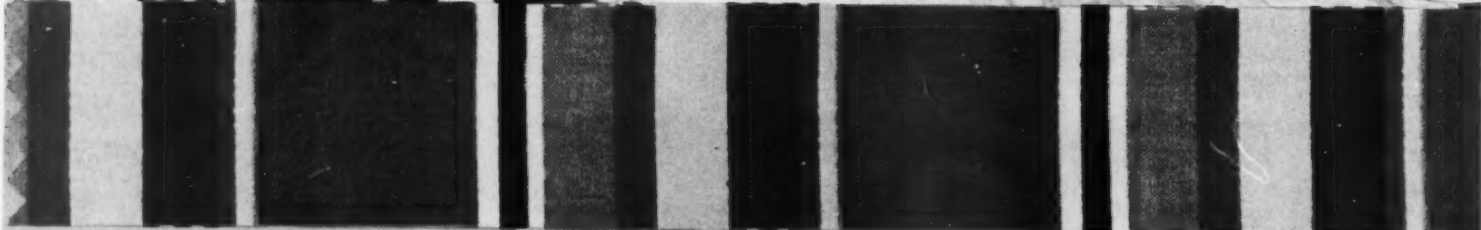
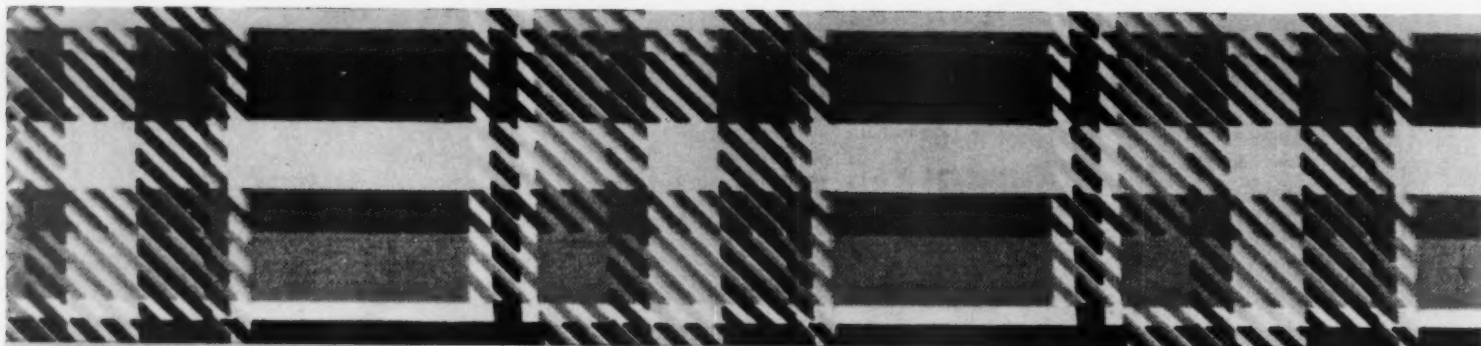


COUNTRY FAIR . . . a colorful, imaginative print based on emblems and objects found at country fairs, each encompassed by floral circlets. The design is printed on Everglaze chintz and Everglaze lawn.

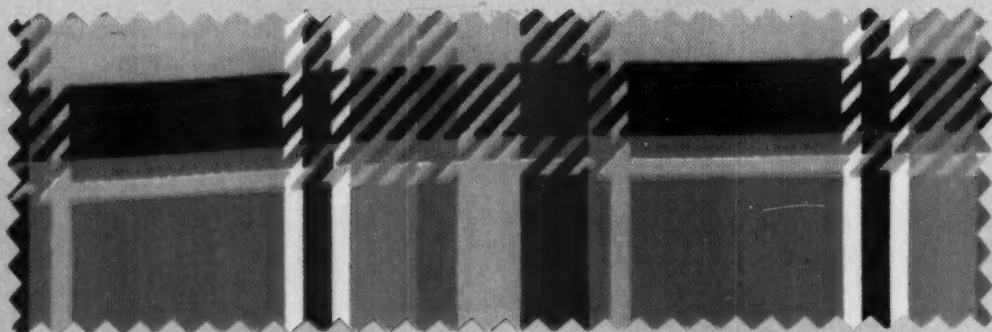


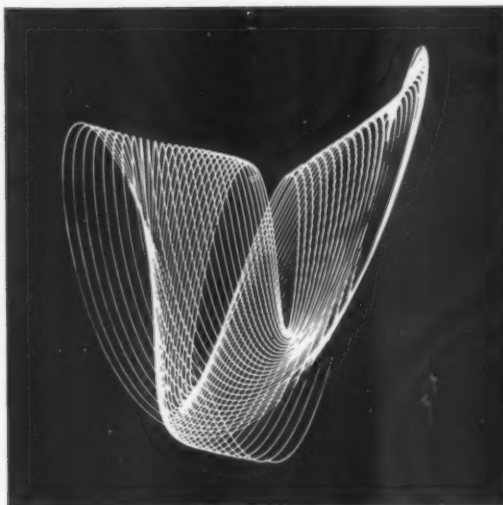


How faithfully the fabric print follows the original art object which inspired it!



A MINOR MYSTERY is the origin of the plaids universally worn in Portugal along the beaches on the Atlantic coast. Pahlmann designed this colorful Everglaze plaid and called it NAZARE, directly translating the unusual plaid shirts of the fishermen of the village of Nazare. *END*





AMERICAN FABRICS

presents a special section

American Industrial Materials

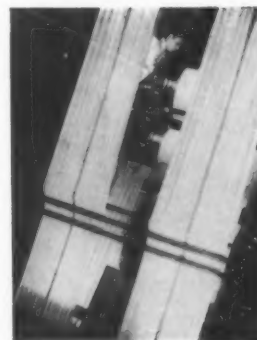
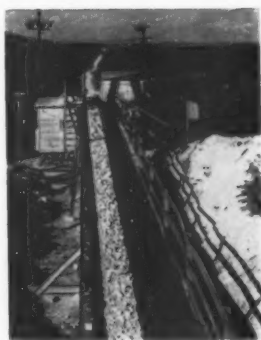
for the presentation of facts and

the dissemination of ideas about the fabrics

of American Industry, Agriculture, and Defense . . .

with special emphasis on the development of

new fabrics and new finishes for new uses.





Many 1953 models feature upholstery of Candalon Nylon



Here's an inside story of the Lasting Glory in new 1953 cars

This year, look for an important auto improvement *inside the body*—in the upholstery! In many new 1953 models, you'll find an upholstery fabric that is as dramatic an improvement, in its way, as these new cars, themselves. It's Candalon Nylon. Candalon Nylon will give you amazingly long wear—in fact, it will stay fresh and new-looking *for the life of your car*. Just as surprising, if Candalon Nylon becomes soiled, *you can clean it with a damp cloth*. What's more, Candalon Nylon has a textured surface that lets you slip in and out of the seat easily, yet you do *not* slip on those sudden stops. Certainly, this is one of the most important inside stories you could find in a new car!

Candalon—®

Collins & Aikman

NEW YORK 16, N. Y., AND IN CANADA, FARNHAM, QUEBEC

America's Largest Weavers of Fine Upholstery Fabrics

WHEREVER YOU GO YOU FIND CANDALON FABRICS — AUTOS • AIRPLANES • BUSES • TRAINS • WEARING APPAREL • FURNITURE

Meeting institutional needs...

exceeding institutional requirements



BEDSPREADS • BLANKETS • MATTRESS PADS

Bates NEW "COLONIAL" MATTRESS PAD

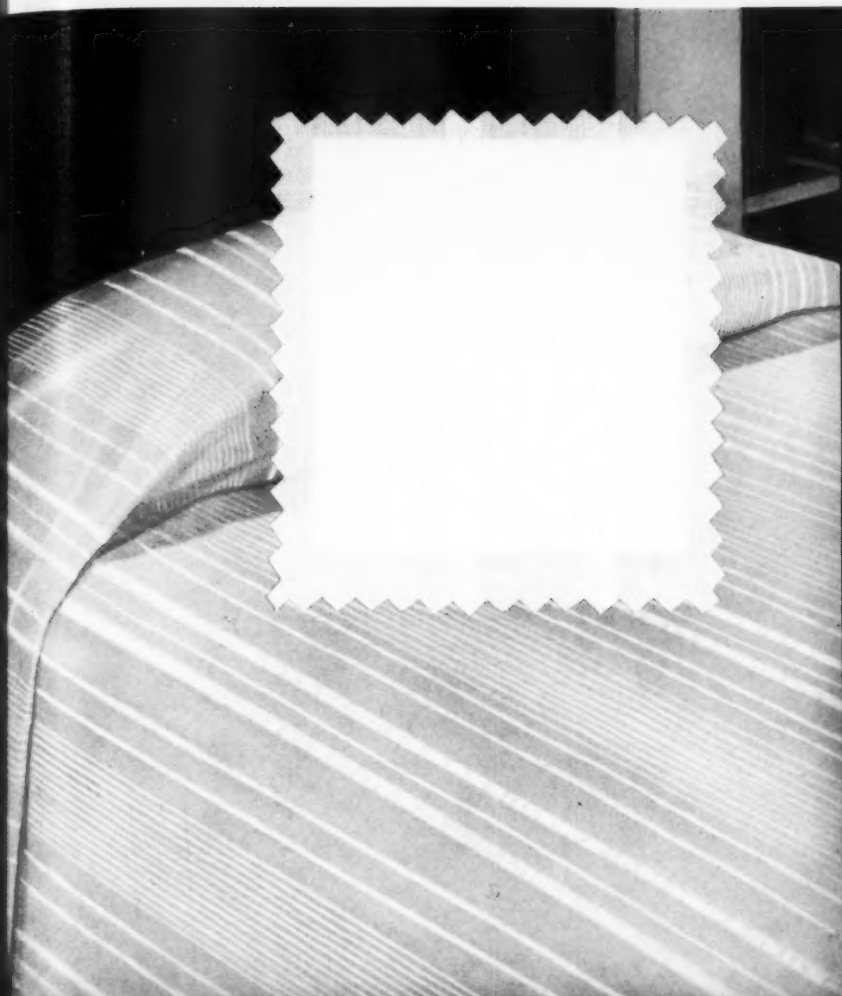
New bleached cotton felt pad is seamless, all one piece. Wears longer: no stitching to break, no filling to lump. Soft and comfortable, clings to mattress, helps keep bottom sheet tucked in. Less bulky: easier to store, handle, launder, dry. Generous length, no shrinkage in width.

STYLE 1302 Sizes 17 x 18, 26 x 34—12 dozen to carton, 1 dozen to package
 Sizes 38 x 72, 38 x 76, 52 x 76—3 dozen to carton, ½ dozen to package

Bates "NAPLITE" COTTON BLANKET

The finest quality cotton sheet-blanket. Softly napped, extremely strong, comfortably warm. Woven of fine cotton to take hard wear, repeated laundering. Will not stiffen or shrink out of size. Ideal as light blanket, warm sheet, ether blanket. Natural only. Whipped edges.

STYLE SF-1300 10 standard sizes, 3 dozen to carton, ½ dozen to package



Bates "Ripplette" meets the most rigid Government specifications. Plump, woven-in ripple, reinforced with eight extra ground threads on each side. No ironing needed. Most economical bedspread for institutional use. Shrinkage less than 4% in length, none in width.

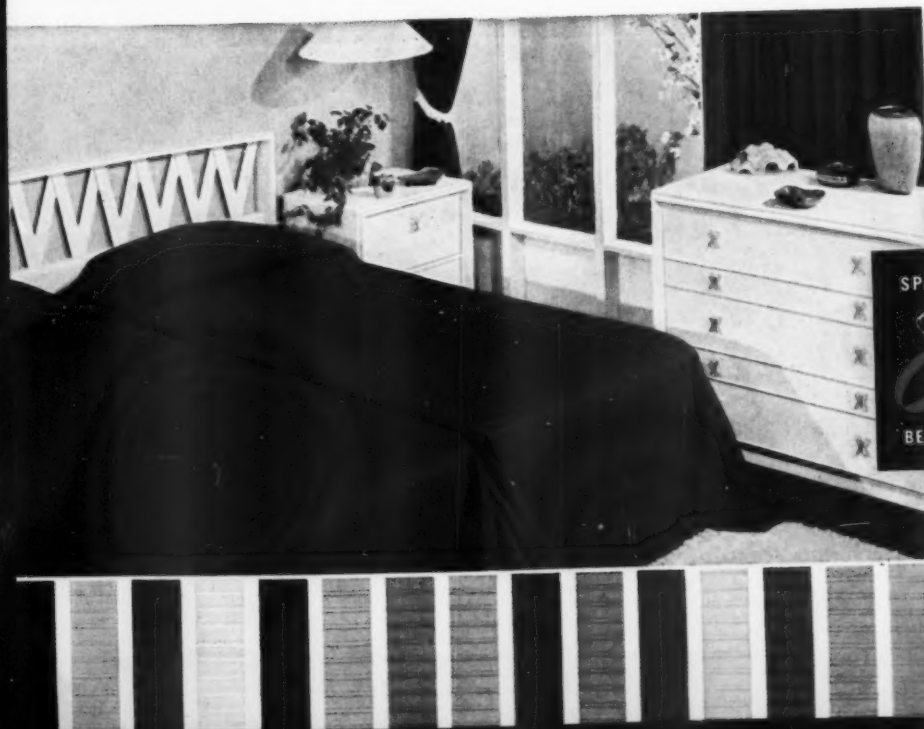


"RIPPLETTE" • STYLE 200

White only.
 12 standard sizes and by-the-yard.
 50 or 100 to case.

Bates "PIPING ROCK" BEDSPREAD AND MATCHING DRAPERIES

*designed
 for today's
 homes...*



SPACE MAKERS • MONEY SAVERS



BEDSPREADS • MATCHING DRAPERIES

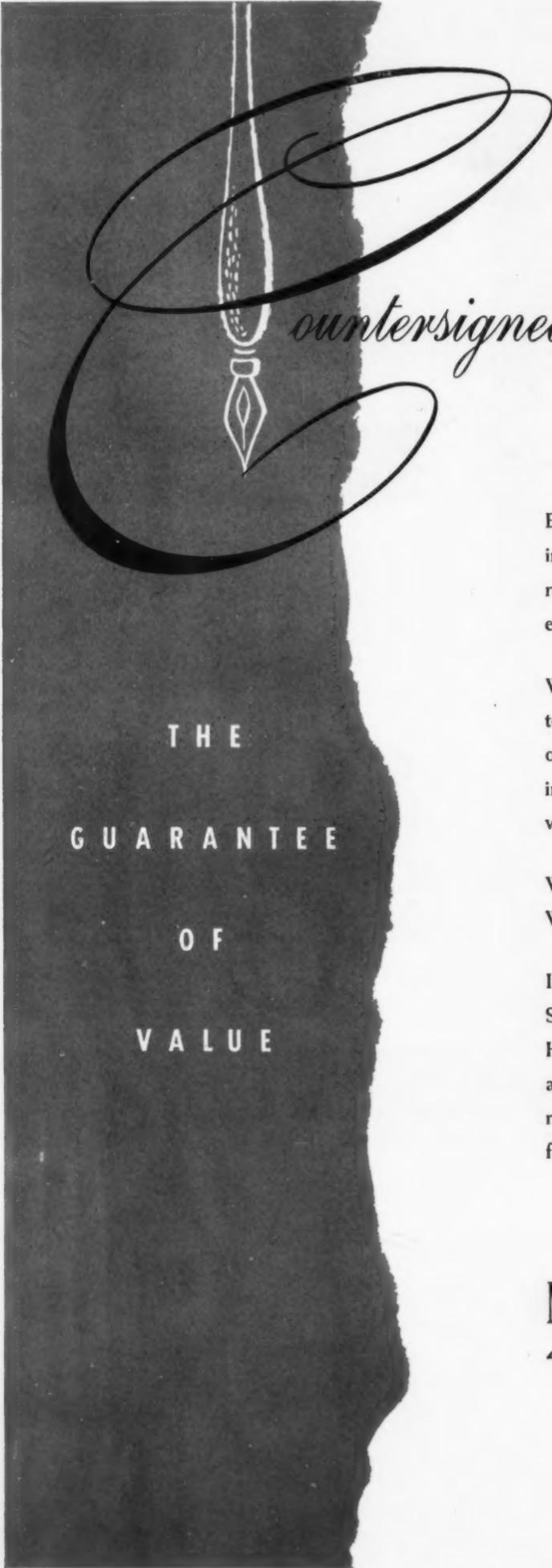
*to make a small
 room look larger,
 lighter, lovelier*

Bates "Piping Rock" has been bought by the millions, for institutions, hotels, homes. It is beautiful and extremely durable. Richly ribbed cotton in white and decorator colors. Shrinkage less than 4% in length, 1% in width.

Bates "PIPING ROCK" • STYLE #709

Sizes 72 x 110 or 90 x 110.
 36 x 90 draperies to match.
 27 or 54 to case.

BATES FABRICS, INC., 80 WORTH STREET, NEW YORK



THE
GUARANTEE
OF
VALUE

Countersigned by McCampbell

Every cutter and manufacturer in the work garment industry knows that fabrics countersigned by McCampbell represent cloth quality of the highest standard, plus every possible service to the customer.

We were the first, as sales representatives of our mills, to promote the idea of special constructions, variety of weaves and colors for uniforms for employees of large industrial companies. This practice now applies to work garment fabrics generally.

We are always in step with changing times and conditions. We stay out in front as a source of supply of new and better fabrics.

In the industrial field, we are headquarters for Super-Twills, Super Shirting, Matched Vat Drills and Jeans, Herringbone Twills, Hickory Stripes, Denims, Poplins and Slubs, Woven Plaids, Corduroys. For substance, ruggedness, surface interest, color fastness, durability, these fabrics are unsurpassed.



McCampbell & Company

40 WORTH STREET • NEW YORK CITY 13





This Scott Tensile Tester Insures the Quality of the Conmar Fasteners In Your Work Clothes!

Here you see the Grab Test being made for determining strength in cross-pull—a most important phase of Quality Control with respect to the manufacturer of Work Clothes fasteners.

Conmar engineers have found that work clothes fasteners had to be unusually strong to stand up under merciless men-at-work conditions. To this end, the most rugged materials are used and the most exacting specifications have been set-up for the manufacture of Conmar's Work Clothes fasteners.

This means that the fasteners are made with fanatical precision. That

they won't rust, corrode or deteriorate after countless washings. That they will outlast the life of any garment.

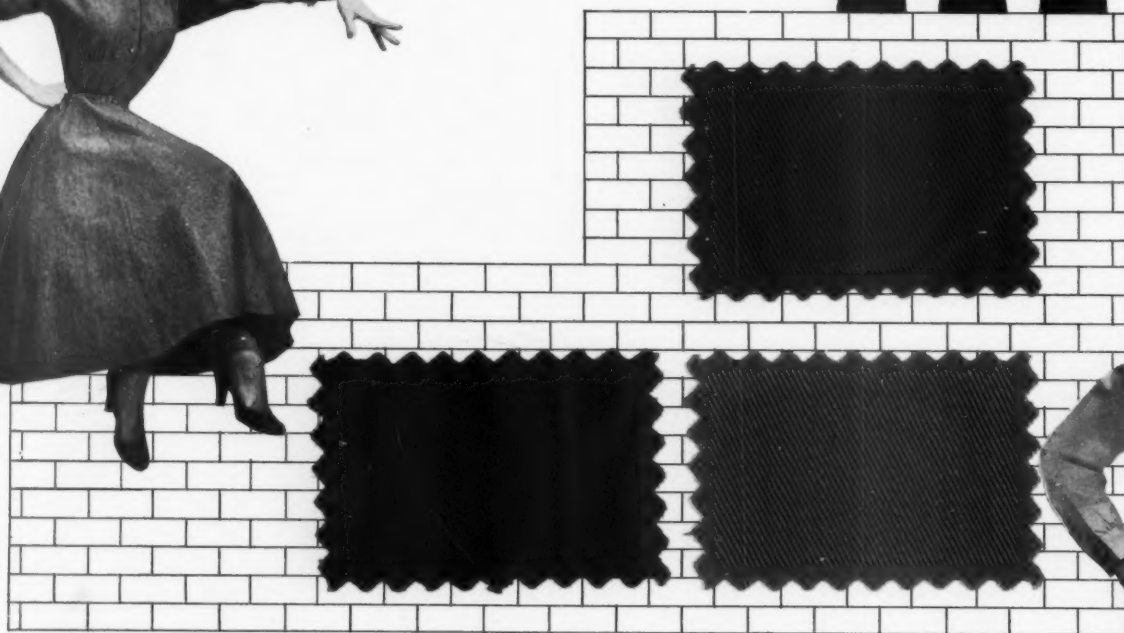
As each work clothes fastener comes off the line, it is thoroughly inspected for construction and detail. And only when it has passed the final vigorous examination will it carry the stamp of Quality—the name CONMAR on the pull tab!

That's why quality manufacturers consider Conmar fasteners as much a part of work clothing as their brand name label and that's why you'll find CONMAR fasteners in the most respected brands of Work Clothes!



CONMAR PRODUCTS CORP., NEWARK 1, NEW JERSEY

Attention
purchasing
agents!



Cone Captain* Twill

Looking for smarter uniforms...for
tops in wearability and economy? Then just
specify Cone Captain* Twill, the famous
dress-up-to-the-job fabric...made
especially for modern industrial
requirements by the country's leading manufacturer
of work fabrics. Sanforized. Vat dyed.
For quality, value and economy on the
job insist on Cone Captain* Twill.

SUGGESTION: Write for special swatch folio
showing complete color range.



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MAJOR SOURCE OF SUPPLY



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ROBBINS SERVES
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AUTOMOTIVE
SHOES
ABRASIVES
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RUBBER COATED FABRIC
AND OTHER
HEAVY SERVICE INDUSTRIES

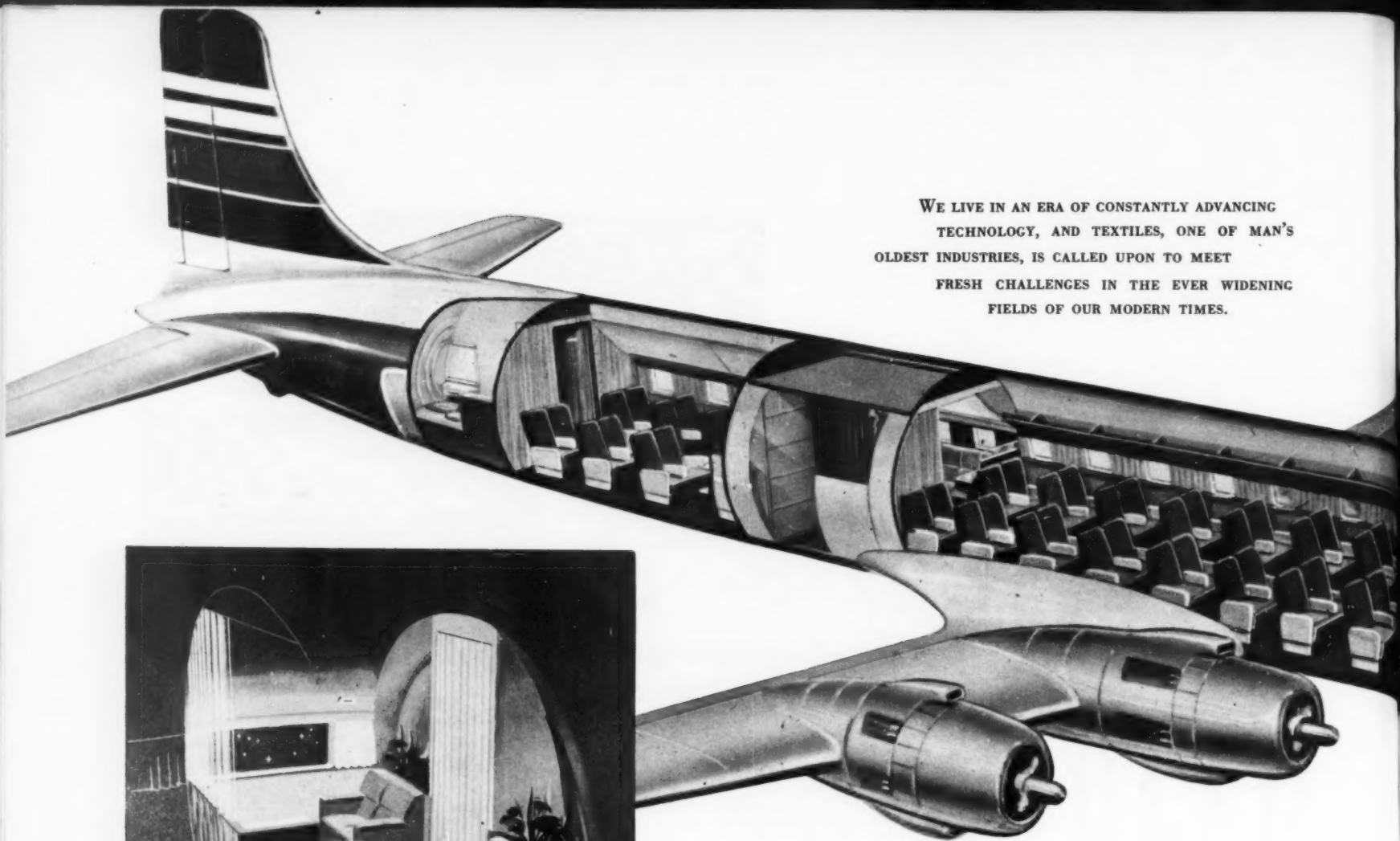
You can depend on Robbins Mills:

- ★ **Quality Control.** Fabrics are properly engineered for their end use.
- ★ **Integrated Operation.** Robbins spins, weaves, dyes, finishes its fabrics. Constant control is maintained over each segment of the production operation.
- ★ **Continuity of Supply.** Robbins five modern plants and the most highly developed production techniques assure uninterrupted delivery schedules.

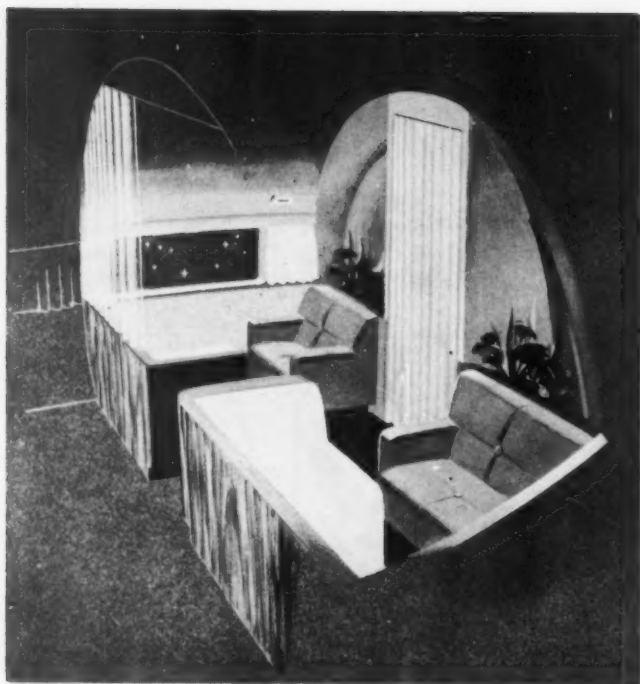
Address Inquiries to: *INDUSTRIAL FABRICS DIVISION*

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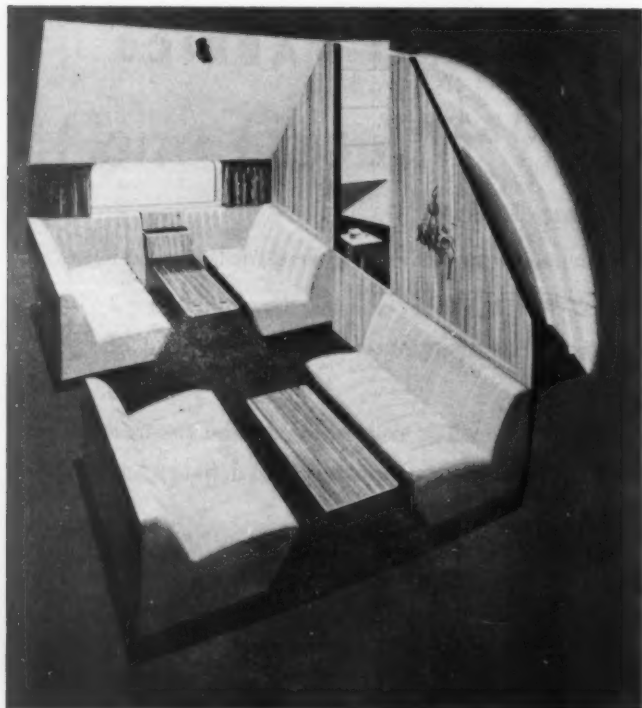
1407 BROADWAY, NEW YORK 18, N.Y.



WE LIVE IN AN ERA OF CONSTANTLY ADVANCING
TECHNOLOGY, AND TEXTILES, ONE OF MAN'S
OLDEST INDUSTRIES, IS CALLED UPON TO MEET
FRESH CHALLENGES IN THE EVER WIDENING
FIELDS OF OUR MODERN TIMES.



*Two views of passenger compartments designed for
the new fifty-two-passenger Douglas.*



AMERICAN AVIATION FABRIC

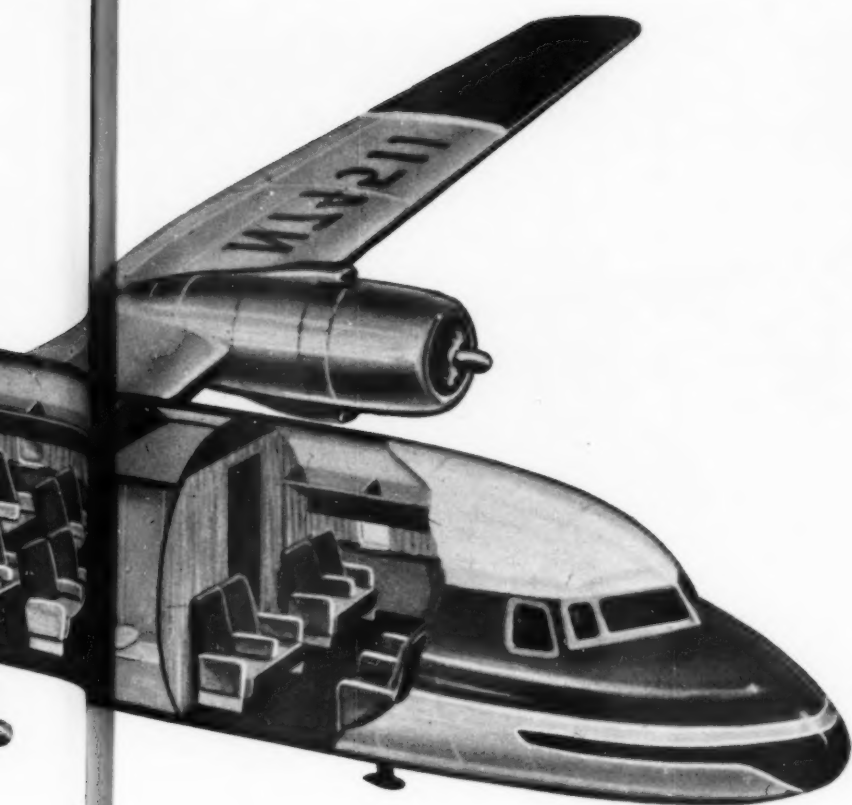
THIS SEEMS TO BE the age of the shrugged shoulder. Nothing is exciting any more. No matter what marvels of science may be reported in the paper tomorrow, we'll accept it all with well-bred interest and take it in our stride.

Perhaps the news that aviation fabrics from American mills are now flying to the four corners of the earth will be received with the casual calm that seems to be the trademark of the era; but certainly there is something of fundamental importance in this fact for everyone who is concerned with textiles.

Nor let it be assumed that just because most commercial planes are manufactured in the United States, they are automatically restricted to home-made fabrics. If imported fabrics can be featured in men's \$65 suits, certainly a luxury industry like aviation can afford whatever foreign looms may offer.

Flight Conditions Dictate Fabric Requirements

The facts of the case are that aviation fabrics are an American idea — an American invention, if you please. They are not like other fabrics, but specially engineered, designed, and styled for the unique and exacting requirements of service many thousand feet in the air. Their native habitat is an area where colors must be faster to sunlight, because actinic rays are stronger at high altitudes and over water. Furthermore, the exigencies of transcontinental and transoceanic flights call for flame-retardant fabrics right across the board, not to men-



FABRICS *fly the world's airways*

tion a degree of lightness far beyond anything needed on the ground. Reduction in weight must be achieved without sacrifice of durability, and must be combined with resistance to soiling and easy cleaning properties.

Sounds like quite an order, but there is more to come. Styling problems are correspondingly complicated and difficult. To start with, one must realize that the passengers see more fabrics than anything else in the interior of a plane. It is not just a question of pleasing the eye. Unless colors are skillfully muted and the harmonies subtly managed, you get a confused effect in the cramped interior that can produce claustrophobia. The fabric stylist who would break into the aviation industry might as well make up his mind that he is entering a new fabric world with an entirely new set of rules and regulations.

How did it all start? What were the special circumstances attending the birth of aviation fabrics. The real beginning goes back to 1941, when Edward A. Smith of Collins & Aikman had the idea of approaching the Douglas Aircraft Company to inquire what kind of fabrics they were getting for the interior of airplanes. He was especially interested in learning whether available materials possessed fabric qualities which this brand-new industry needed.

It soon turned out the answer was a big NO — that car-

petings and upholstery materials were far too heavy. Furthermore, selections had to be made from fabrics that were developed for purposes in no way related to the aircraft industry. The result was a fabric development which reduced the weight of carpeting from 64 to 44 ounces per square yard by means of finer count cotton backing yarns stiffened with latex. Similarly, a worsted-faced Bedford cord upholstery fabric replaced a wool-faced cloth and reduced the weight from 22 to 13 ounces per square yard.

The weight saving in both the carpet and upholstery fabrics turned out to be an enormous contribution to military transport by air during the Second World War. That is why these fabrics were immediately adopted by both the Army and Navy. The armed forces standardized olive drab seat coverings and luggage tan curtain fabrics, together with green carpetings. Thus Government airships became the proving ground for modern aviation fabrics.

How the Post War Shift Was Made

Upon the termination of hostilities and the transfer of Army and Navy planes to commercial airlines, it became imperative to obtain interior fabrics and carpets quickly to replace equipment requisitioned for war use. 100% olive drab walls and seats would not do. On the other hand, how could new civilian fabrics be developed overnight? Collins & Aikman found a way. They made up 5,000 yards in the grey of each of the four basic aviation materials: carpeting, seat cover material, curtain cloth, and wall covering. It was then pointed out to the various commercial airlines that by the use of individual color combinations, these basic proven interior materials could be used and still maintain individuality of interior appearance. It would also make possible the conversion of this replaced equipment in weeks instead of months.

To appreciate what Collins & Aikman were up against, you must realize that instead of the 15,000 airships with seating capacity of up to 80 passengers, which our commercial airlines are operating today, the prewar total was only around 150 and the maximum seating capacity was 21. How well the gamble paid off may be judged by the fact that today Collins & Aikman aviation fabrics are used by 55 American and foreign airlines. These airlines not only cover all of Europe, but also all of South America, Africa, Australia, the Philippines, Japan, and India as well.

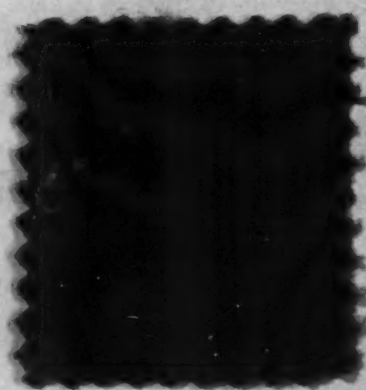
As the commercial aircraft industry grew and expanded, whole fleets of the newest and advanced types of planes were added. Because a minimum of one to two years is required for the delivery of such new equipment, enough time was available for the designing and weaving of interior fabrics created for the sole use of the various individual airlines. As a result, standardization of interior fabrics and color schemes is as much a trademark of an airline as the insignia that gives identity to the plane exterior.

The needs and demands of modern aviation, fabric-wise, are without precedent or parallel. To start with, the whole operation is in the nature of a *package deal*. It would be complicated and cumbersome for airlines to buy their floor covering from one mill, their seat covering from another, and their window covering or wall covering from still another supplier. Therefore, the only mills that can correlate all the diverse items in this *package* must have carpet looms as well as other specialized equipment for the various fabrics needed.

It is also necessary to be geared up to work as far as two years ahead; and it must never be forgotten that this is a textile engineering job in the most technical sense of the term. The mills are required to work not only with the manufacturers of airplanes, but also with the resident engineers maintained by the airlines to represent them at the plants. The designers, too, occupy a position of the greatest importance. This brings in men like Raymond Loewy, Howard Ketcham,

(please turn)

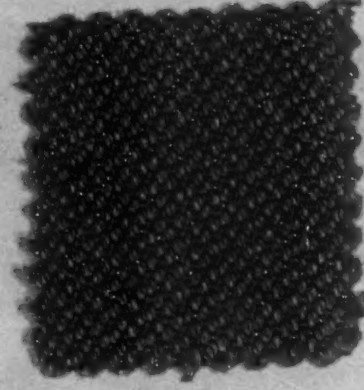
THREE BASIC TYPES OF FABRIC ARE USED IN MODERN AIR TRANSPORTATION.



Spun nylon upholstery fabric in small check plaid design.
By COLLINS AND AIKMAN



Curled mohair carpet for aircraft, with a neoprene backing.
By COLLINS AND AIKMAN



Crowsfoot satin drapery fabric of blended yarn, Lurex decorated.
By COLLINS AND AIKMAN

These three fabrics illustrate the color scheme or color signature of PAN AMERICAN WORLD AIRWAYS.

Aviation Fabrics . . . continued

Henry Dreyfus, and Walter Teague. Sometimes the mill will work with one designer representing the airlines and another designer representing the manufacturer of the airplane. It is a luxury industry, to be sure, dedicated to the principle of giving the public the finest of everything, but it also offers transportation at competitive prices. In other words, you are of necessity working for a lot of highly exacting bosses.

Necessity for Uncompromising Quality

No expense and no trouble is spared to insure the development of the finest of interior furnishings, both functionally and for their appearance value. To prove the point, before any commitments are made, the airplane manufacturers construct what they call a full scale *mockup* of the interior half section of the fuselage. Here all fabrics, as well as other appointments, are evaluated and either approved or rejected. The ultimate approval of the mockup determines final specifications for the finished interior.

Not all airlines want modern fabrics made of modern fibers. Some still prefer all-animal fibers, woolens, and mohairs. This preference includes the classic broadcloths and Bedford cords that were used to upholster carriages fifty years ago. When developed in light aviation weights and styled for air travel, they certainly need no apologists.

On the other hand, the use of nylon in aviation fabrics has assumed very large proportions. Soon after this fiber appeared on the market, it became plain that here was a new weapon in the relentless warfare against weight: a fiber with extraordinary strength, stamina, and stability per ounce. For a long time development was retarded by nylon's lack of affinity for dyestuffs, but this is no longer an important problem. As practical colors were developed and the best constructions for the purpose evolved, the styling advantages of combining a shiny fiber with a dull one presented themselves. Now Orlon and other new fibers not only make possible new decorative effects, but also open the door to the development of improved practical qualities.

The whole subject of new fibers is so important in aviation fabrics that Collins & Aikman maintain a textile chemist and engineer whose sole duty it is to evaluate each new fiber as it comes along — from the standpoint of spinning, weaving, dyeing, and processing. It is deeply impressed upon those responsible for maintaining American leadership in aviation fabrics that there is no such thing as standing pat. The mills that make these highly exacting fabrics must be just as development-minded as the dynamic industry which they serve.

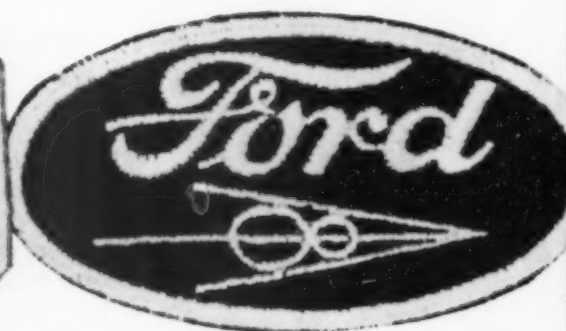




the story of the

AMERICAN INDUSTRIAL UNIFORM

Hundreds of millions of yards of special fabrics are bought annually for the industrial uniforms worn by millions of men and women in a vast variety of activities. The scope and importance together with the possibilities in this major market are spotlighted in this special article by the Editors of American Fabrics.





Insignia courtesy GEMSCO INC.



The labels in themselves have become an integral part of many industrial uniforms, forming a significant badge of service which has become known through the years. These are, incidentally, also one of the miracles of the American textile business, woven from hand-drawn, stitch-by-stitch designs in quantities up to 684 at a time on one single machine.

the story of INDUSTRIAL UNIFORMS

1. The New Approach. Do waiters necessarily have to look like a lot of old black crows in their generally dingy black tuxedos and not-so-gleaming white shirt fronts? Not so, says the man who runs the Hotel Astor's famed Hunt Room. Why not a uniform that does something for the self-esteem of the waiter as well as contributes to the colorful character of the surroundings? And that is the story back of the bright scarlet hunting coats made of Cramerton Army Cloth worn by the men who serve your lunch while you look down on Times Square.

There you have the two extremes: the depressing black garment that is a badge of servility, contrasted with the gay red coat that is the symbol of smartness. But there's more to it than that. The old is costly, easy to get dirty, expensive to dry-clean; the new is relatively low in cost, easy to keep spick-and-span.

For all its air of departed grandeur, the waiter's musty black attire is a sort of industrial uniform that is many generations old. Other trades have their characteristic costume details that reach far back into the past. Sailors' bell-bottom trousers are a relic of the square-rigged ships. For all we know, the chef's cap and cobbler's apron may go back to medieval guilds.

Today there are more and different kinds of industrial uniforms than you can shake a stick at; they're worn by band musicians, ushers, park attendants, delivery men, bottling company employees, transportation workers, circus employees, aviation mechanics, gas station attendants, foresters, municipal employees, nurses, waitresses, and others too numerous to men-

tion. They range from simple, functional, coverall types to the elaborate regalia of the Park Avenue doorman and the leader of the circus band. In many cases the industrial uniform represents one of the major procurement activities of the modern purchasing agent. The total fabric requirements involved run high into hundreds of millions of yards annually and constitute a major portion of America's business in industrial fabrics.

2. The Economics of Uniforms. The underlying philosophy is aptly expressed in a slogan used by McCampbell & Company way back in 1934: "A Workman Is only as Smart as He Looks." Old clothes do not make for pride. Slapdash appearance begets slapdash performance. Since profits depend upon performance, the question of uniforming employees has a direct bearing on the balance sheet.

Every employee who comes in contact with the public is an advertisement for his employer, but only the well-dressed employee is a good advertisement. It pays to put employees into smart uniforms for the same reason that it pays to buy good office furniture and smart stationery. And don't forget that the customer wants to be proud of the big corporation which sells him gasoline, groceries, bread, and milk. People would rather pay their money to smartly toggled attendants.

This is a modern merchandising fact which alert industrial leaders are turning into an advantage against their more old-fashioned competitors. Smart attendants in natty service suits

(please turn)

Identify Yourself

with

TEXACO



Automobile owners in all the 48 States are familiar with the Texaco uniform, which has been worn by the operators of Texaco stations for many years.

This is a modern form of advertising which the public recognizes as a sign of Texaco service.

A neat appearance creates a good impression.

A good impression increases sales.

To assist you in identifying yourself as a sales of Texaco products, The Texaco Company has made available to you the same standard uniform that is so well known throughout the country.

Full Description of this Uniform will be found inside this folder.



Stressing the importance of the industrial uniform is the advertising copy which states: Automobile owners in all the 48 states are familiar with the Texaco uniform . . . This is a modern form of advertising which the public recognizes as a sign of Texaco service . . . A neat appearance creates a good impression; a good impression increases sales.

TEXACO Standard Uniform

Texaco uniforms are available in "Texaco Winter" Green color, in the following materials to meet seasonal requirements:

1. **WINTER, DALLIE:** Cap, Pants and Windbreaker, in 16 oz. pure woolen worsted material. A fast dye material, best for appearance and long wear, particularly where exposed to spillage of factory acid solutions, which do not attack pure wool.

2. **WINTER, REGULAR:** Cap, Pants and Windbreaker, in heavy cotton twill. A material with good wearing qualities.

3. **SUMMER, DALLIE:** Cap and Pants of 12 oz. pure wool worsted serge. A light weight, fast dye material for warm weather, particularly good for long wear where exposed to spillage of factory acid solutions, which do not attack pure wool.

4. **SUMMER, REGULAR:** Cap and Pants of excellent quality cotton twill. A fast dye material suitable for warm weather.

5. **WINTER WORKER WEAR:** Hi necked, button-down coat, knee-length; a warm garment suitable for cold weather.

A short of fast dye cotton jean material, and a black bow tie of all, can be purchased as an item of each of the uniforms described above.

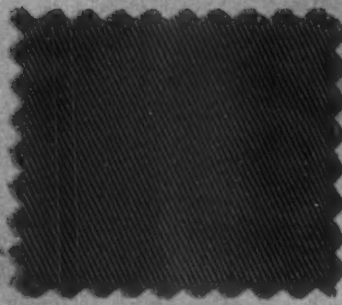
The materials in the above uniforms were selected as a result of The Texaco Company's experience in purchasing uniforms for many years, and while cheaper materials could have been selected, their wearing qualities would not be satisfactory, and they would not hold their color during laundering in the strong solutions used by mechanics to remove oil and grease stains.



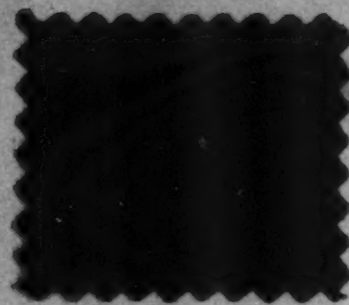
From the Fashions for Industry wardrobe coordinated by Tina Leser; a one-piece fitted dress



WELLINGTON SEARS Armada, a cavalry twill with frosted effect obtained by the use of acetate and cotton, weighing 10 oz. finished. For work and semi-dressy clothes, it is also well adapted to uniforms, odd trousers, caps, and Eisenhower-type jackets.



GRANITEVILLE Super Twill, a type 4 specification U.S. Army uniform twill which weighs 8.5 oz.-plus per square yard. It is vat-dyed, fully mercerized and sanforized, with resin finish for firm hand. For dressy work pants and matched suits.



CONE MILLS' Captain Twill, an 8.5-oz. type Army twill, vat-dyed, sanforized, and mercerized. A four-leaf twill weave for men's trousers and slacks and for pants to match suits, it has good breaking strength, yet is a dressy work fabric woven with carded yarns.

ALL FABRICS SHOWN HERE ARE SANFORIZED

Industrial Uniforms . . . continued

are making and holding customers for gasoline stations. Waitresses in colorful frocks are swelling restaurant patronage. Spick-and-span operators in all sorts of manufacturing enterprises are reaching a new high level of efficiency. Shirt sleeves are OUT. Uniforms are IN — because they PAY.

An evaluation of the impact of industrial uniforms on the textile world is certainly in order. You find yourself all over the lot in no time, because industrial *uniformings* (there should be such a word) range from winter-weight woolens and worsteds to sheer seersuckers; and some functional fabrics, like fireproof asbestos and Fiberglas, to materials chosen mostly for eye appeal that you see in highly stylized tearooms.

3. Fabric Fundamentals. Getting down to cases, however, you do not have to pursue your inquiry very far before you unearth abundant evidence that the most important industrial uniform fabrics are made of cotton. You will also find out that there are some famous as well as semi-famous fabrics in the field which merit special mention.

The first is the famous Type 1 Army Cloth, originally developed for officers' cotton uniforms and still the official fabric for this purpose. It is the deluxe all-purpose industrial uniform fabric. The best-known of this type are Reeves Army Twill and Cramerton Army Cloth, both nationally advertised.

Then you have your Type 4 or Type 6. It is really a carded adaptation of Type 1 and combines a high degree of eye appeal with excellent wearing qualities at a popular price. In this category Stevens Twist Twill, Cone Captain Twill, Springs Supratwill and Wellington Sears Columbus Twill are the branded advertised fabrics.

Next come the poplins, which have served as the basic industrial uniform shirting for many years. The name fabrics in this department are Simpson's Soulette Poplin, Reeves Glen-garrie Poplin, and Burton's Irish Poplin. The last named, the oldest on the list, has been acquired by Reeves Brothers.

You must also reckon with a formidable yardage of herring-bone twills and drills, as well as shirting jeans. The advertising of these fabrics has been negligible; but do not minimize their importance. Incidentally, it is interesting to note that some of the uniform manufacturers compensate for the lack of eye appeal of this cloth by using trimmings of brightly colored Type 1 Army Cloth.

Another industrial fabric that is breaking into the better end of the business is the 9-ounce sateen. This, too, has an Army background. When first adopted by the military in 1943, it was described by the Quartermaster Corps as "probably the

toughest, most versatile cloth on record." Among the better fabrics, too, we must not overlook the all-cotton gabardines with their sharp, knife-like twill and rich luster.

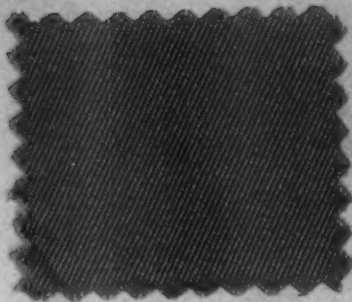
At this juncture someone may say, "Isn't denim a greater fabric for work, by far, than all the others?" Yes, but it is a work clothing fabric for garments generally purchased by individuals. You might call denim the uniform fabric of the farmer and the railroad engineer and the sailor, and many other groups of workers; but they buy their denims individually. You rarely hear of denim uniforms purchased by a company for their employees. On the other hand, it should be noted that denim is one of the featured fabrics in some of the smarter new industrial uniforms for women.

No discussion of cotton uniform fabrics would be complete without mention of the extravagant variety of brilliant colors which the mills have been developing in the basic cotton uniformings. Part of this can be explained by styled-up uniforms especially for women. Part is attributable to the use of brighter colors generally. But there are also more serious motivating forces involved. For example, brilliant scarlet is becoming more and more the uniform color for hazardous road work and construction work, where safety is dependent upon visibility.

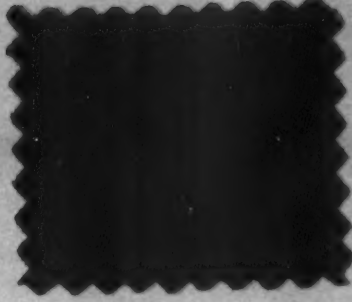
The Navy device of distinguishing between different types of key personnel on the carriers, by means of giving each type an identifying color in a brilliant shade, has had its impressions on industry and its repercussions on mill operations. Similar color schemes for protective purposes, as well as reduction of the margin for error, have been adopted in some of our great atom projects. So you see these gold and scarlet and purple uniform fabrics are used for something besides circus bands.

4. Merchandising Considerations. There are three broad classifications of industrial uniforms: first, the un-branded types which are purchased by individuals, mostly employees of small companies. Then there is the intermediate type of industrial uniform where a retail store may make the arrangement with the company and stock a supply of uniforms together with the firm's emblem or insignia. Finally, you come to the uniforms purchased on strict specifications by large companies, such as the famous beverage companies, oil and municipal services.

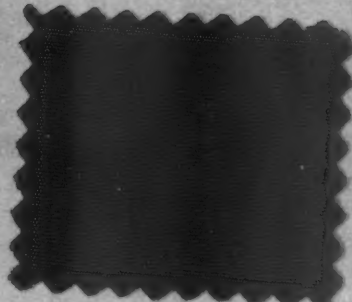
The manufacturers in this interesting business about which, curiously enough, little has been written heretofore, range from general cutters of work clothes who set up a special uniform section, to large specialized manufacturers of industrial uniforms. In some instances these big uniform people like-



REEVES' Army Twill, a cloth made to meet government specifications for all army uniforms, is a high luster, 8.2-oz. 2 x 2 exceedingly durable combed cotton twill which has wide use in transportation, trucking, milkmen's, and all types of uniforms.



GALE AND LORD Klondike, a 9-oz. brilliant luster sateen of combed 2-ply cotton in warp and filling. Durable for outdoor wear, snag-proof, with a high degree of natural wind resistance and good breaking strength, due to additional ends and picks.



SIMPSON'S Soulette, an industrial uniform shirting fabric woven of fine combed cotton poplin. For uniforms for policemen, municipal and county employees, letter carriers, firemen, airline personnel, transit operators, Army, Navy, and Air Corps.

THE OFFICIAL Hotpoint UNIFORM

Manufactured by
SWEET ORR & CO., INC.
1245 Third Avenue
New York 16, N. Y.



Sturdy, smart, and appealing Hotpoint uniforms guarantee a favorable impression wherever they are worn and back good will for your product and service.

Sweet-Orr & Co., Inc. carefully follows the OFFICIAL HOTPOINT SPECIFICATIONS from quality and size uniform 8.2 oz. dress fabric for pants, shirts, and caps, and 1.2 oz. dress material for skirts.

It's easy, it's smart, it's profitable to have your men dressed in this handsome uniform. Tailored water blanks can be obtained by writing.

Hotpoint Co.

A DIVISION OF SWEET-ORR & CO., INC.

PRODUCT SERVICE
Technical and Educational
211 So. Wacker Drive
Chicago 11, Ill.



All Sweet-Orr uniforms guarantee quality and every the end of approval of the personnel in your complete organization. Exclusive franchise of Louisiana.

Sweet-Orr & Co. carefully tailors the official Hot Point Uniform from a durable vat-dyed fabric.



wise go in for policemen's and firemen's uniforms and regalia for lodges and fraternal organizations.

The more you become acquainted with the marketing and merchandising of industrial uniforms, the more you will be impressed by the important part played by the companies who make the emblems and insignia. This type of identification may take the form of a monogram, or an initial letter, or the company's name, or a trade name, or a trademark, or a combination of two or more of these. Whatever the type of identification, it is the frosting of this particular cake. The merchandising of the emblem is certainly an integral part of the merchandising of the garment besides being the focal point of advertising value and pride in the organization.

Another merchandising consideration of the greatest importance has loomed up during the last few years; and that is the keen interest some of the labor unions take in proper industrial uniforms for their members. This is obviously altogether too large a subject for more than the briefest mention here, and it is still far too early in the game to know to what extent the influence of unions on industrial uniforms will grow.

Suffice it to say that to date the attitude of the unions has been to insist upon top quality fabrics, workmanship, and styling.

5. The New Fibers. All this should not be taken to mean that Old King Cotton has a virtual monopoly on the industrial uniform business. It is only necessary to point to the large number of nylon waitresses' and nurses' uniforms that have come into prominence during the last few years. And with Orlon-blended suits crowding into the businessman's wardrobe, can Orlon-blended policemen's uniforms be far behind? Obviously not. Astute textile observers are likewise watching with great interest the development of carded cotton twills blended with nylon. Here it is thought that the appearance value of nylon, plus its tremendous wearing qualities, can make a notable contribution without exceeding the practical price requirements of the market. This is precisely the type of fabric that may well establish itself alongside of the great all-cotton fabrics which are the backbone of the industrial uniform fabrics.

You hear a lot about some of the new fibers for industrial apparel, where resistance to various chemicals is of first importance. Fabrics made of Dynel are gaining wide acceptance, not only because of the protection they afford to the wearer, but also because they greatly increase the life expectancy of the garment. A special point should likewise be made of the fact that jackets, trousers, work aprons, and socks made of Dynel possess the important added advantage that they may be cleaned or decontaminated in acids without harm.

Orlon one-piece work suits have likewise been developed for protection against noxious chemicals and for various other benefits conferred by the characteristic properties of this particular acrylic fiber. Leading mills are reported to be concentrating an important part of their fabric development programs on new fibers and blends for the primary purpose of improving fabrics for industrial workers.

6. The Feminine Contingent. Before World War II, practically the only women's industrial uniforms that amounted to anything were for nurses, waitresses, maids, ushers, and girl bands. The girls used to rebel against this regimentation.

From the moment the first WAC appeared on the streets in her smart new uniform, a new era was unostentatiously ushered in. None can deny that the ladies in our armed forces liked the uniforms and were just as proud of them as the men. In the meantime, the girls who were replacing men in industry were getting used to overalls, dungarees, jumpers, and other specialized working apparel.

These influences did not suddenly cease to exist when the

(please turn)



Original photograph showing slack-alls worn at the Worthington plant, Harrison, N. J. during World War I. Courtesy Ramsey Sportwear Co. Inc.



CASE HISTORY

INDUSTRIAL UNIFORMS get a BEAUTY TREATMENT

When women invade industry, can fashion be far behind? Not as long as Tina Leser has anything to say about it. Unwilling to rest on laurels won in the *haute couture*, this gifted designer has decided that women on the job need something more than protection from poisonous dusts and acids, more even than functionally correct and comfortable attire. They need Style with the good old capital S — the kind of style that will make them want to wear their work suits for leisure time as well. . . That's the kind of work clothing coordinated by Tina Leser and featured by Fashions for Industry. It even includes specially designed straw baskets instead of the ancient lunch box, and such clever new touches as narrow pants legs that are safe around machinery and may be tucked under wrap-around skirts, so that Sister can look her prettiest between shop and home. Wait till you see some of the striking fabrics, clever use of contrasting colors, and smart detailing generally. No wonder companies like Fairchild Aviation and Evins Shoes are choosing from these styles for their own industrial uniforms.

Industrial Uniforms . . . continued

fighting was over. Quite the contrary. The WAVES and WACS are still walking advertisements for the uniform business, as are the nattily attired hostesses of the airlines. They have brought glamour with a vengeance to the industrial uniform.

In the meanwhile, women who have worked their way into occupations formerly filled by men have found it increasingly necessary to wear some kind of protective and functional clothing. The result is that we have a new army of uniformed workers in the making. Girls in uniform have come a long way from the men's overalls they used to wear when they first went to work in factories and farms right after Pearl Harbor.

It is still too early to evaluate the consequences. The resultant swing to bright colors has already been noted. In addition, feminine uniforms have emphasized the smart tailored details, like piping, contrasting trimming, smart pocketing, and gen-

eral sprucing up. And now the stylists are being called in, not merely to give women's industrial uniforms a beauty treatment, but to redesign them from the feminine point of view, so as to be suitable for wear between the home and the factory, as well as for ease and comfort on the job. There's a lot of smoke . . . and quite a lot of fire too.

7. Competition of Sportswear. It isn't all plain sailing, by any manner of means. There are all kinds of currents and counter-currents at work behind the smooth surface of the industry. One strong trend, in particular, bears watching, and that is the adoption of sportswear on the job by many of the more highly salaried workers, especially those engaged in the *cleaner* manufacturing operations. Some of the photographs of the employees leaving spick-and-span modern plants show the kind of slacks, sport shirts, golf jackets, and sport coats

previously associated with days off, not work days. To be sure, workers of this type never did wear industrial uniforms, but the example they are setting by appearing on the job in the clothes they used to wear week-ends may exert influence.

Pulling in the opposite direction is the increasing attractiveness and the practical advantages of the smarter and better types of modern industrial uniforms. At their best they can be real morale builders for their wearers, in addition to furnishing maximum comfort and protection on the job . . . not to mention the comfort and efficiency that come from functionally correct garments specifically designed and engineered for the job to be done. And let us not forget the identification value and advertising value to the company concerned. As long as there are smartly uniformed pilots and hostesses strutting around our great airports, you may rest assured that a large part of the working population of the United States will vote for industrial uniforms that are both comfortable and smart.

8. Indispensable Factors. Before the American industrial uniform could possibly attain its present status of service and smartness, some very basic improvements had to be made in both the fabrics and the garments. To appreciate the far-reaching nature of these improvements, you have only to go back to the faded and ill-fitting cotton uniforms



Sportswear in industrial uniforms.

of World War I and the ditto industrial attire of the Twenties and early Thirties.

The first indispensable ingredient in modernizing the industrial uniform was the development of fast vat colors. Color fastness is something pretty nearly everyone takes for granted nowadays, but if we were still restricted to the old faded fabrics we couldn't possibly have the new styles in uniforms.

The next improvement on the list was the invention of the Sanforized process of controlled shrinkage by Sanford L. Cluett. (People are already beginning to forget the inventor after whom the process was named.) The part played by



Above are two more photos from the Fashions for Industry wardrobe coordinated by Tina Leser . . . from Ramsey Sportswear Co.

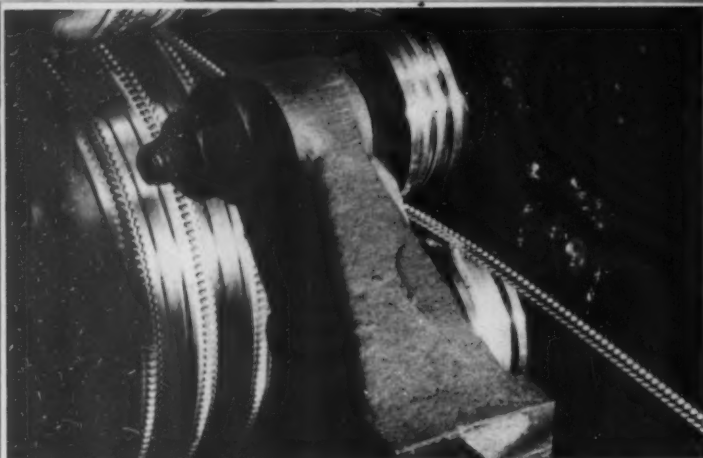
Sanforized speaks for itself. In the first place, washable work garments that shrink cannot possibly fit. In the second place, in the old days of shrinking work garments, it was necessary to buy them much too large, so that they were a menace around machinery until shrunk to size. From the point of view of style, it should be added that it was not until the manufacturers had adopted Sanforized fabrics right across the board that they developed tailored sizes and models proportioned to fit all shapes of wearers.

A host of other improvements and refinements in manufacturing soon followed. Better bar tacking methods were introduced, tool-proof pockets became standard equipment, tailoring details were adapted from the methods of manufacturers of business clothing.

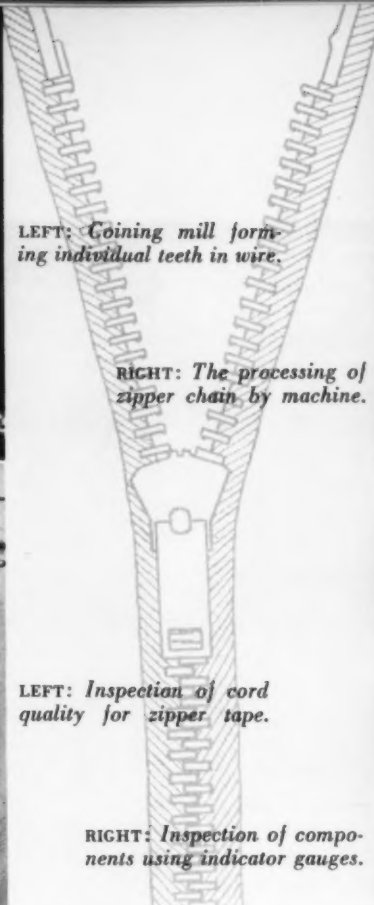
By far the most important improvements, however, were the new mechanical closures that were introduced in the Thirties — the slide fasteners and snap fasteners. It is strange but true that slide fasteners had become the accepted closure in dress trousers for several years before they were introduced in work pants and uniform pants. Of course in the case of industrial attire, slide fasteners are even more important than they are in business clothing because they are used as closures for jackets and fancy pockets, as well as pants. And don't forget that slide fasteners as well as snap fasteners have a lot to do with the fit and fitness of garments.

All in all, you will find very few types of clothing, if any, that have undergone a more complete improvement and modernization program than the industrial uniform. The gulf between today's uniforms and the old pre-improvement versions is wide indeed.

The modern closure picture in the field of Industrial Uniforms is discussed on the following page.



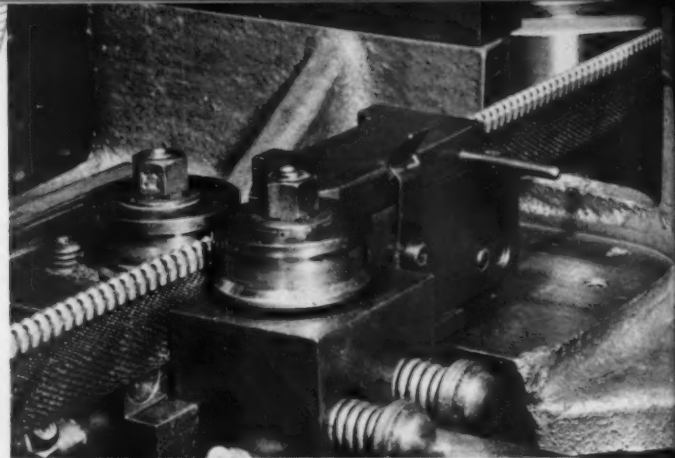
LEFT: Coining mill forming individual teeth in wire.



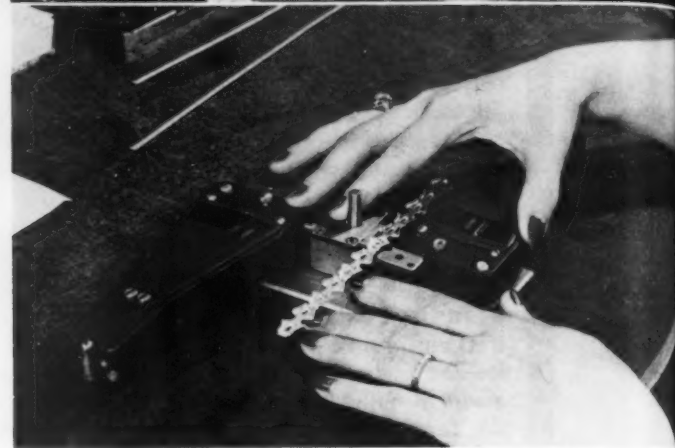
RIGHT: The processing of zipper chain by machine.



LEFT: Inspection of cord quality for zipper tape.



RIGHT: Inspection of components using indicator gauges.



Closures for Industrial Uniforms

Creating slide fasteners for the industrial uniform and work-clothing industry.

ONE OF AMERICA'S LEADING manufacturers of slide fasteners makes 420 different types of fasteners in its regular line. And this multitude of types does not take into account 105 tape colors, which designers' demands are ever increasing, or the many different lengths, which have varied from two inches for baby slippers to twenty feet for joining the edges of carpeting in a hotel lobby.

Slide fasteners must literally be made to sell for pennies, and therefore must be produced upon a mass basis. Yet there is no single all-purpose slide fastener. By collaborating with potential users, and understanding their particular problems, the proper fasteners are created for integration in each end product. Thus, new and specific mass markets for many industries were formed as parts of an over-all mass production business. The key to the mass production of so many different fastener types, each engineered to meet the specific needs of a particular industry, is flexibility of organization — sales, research, engineering, tooling, and production facilities.

Unusual Precision

For the precision device that it must be — flexible textile fabric and rigid metal — the zipper is an unusual combination of materials. Two textile tapes support the metal scoops or teeth in spaced relationship. It would seem reasonable to provide a more linearly stable material than a textile fabric to support the teeth; for example, a thin strip of metal. The principle of operation of the zipper, however, requires that the support for the teeth be able to flex in its own plane, otherwise the teeth will be unable to mesh with one another. Since

the support also serves as the means for securing the fastener to the garment, textile tape is the best answer. This, of course, places great demands upon the textile tape. It must have flexibility; it must be very strong; and it must have extraordinary linear stability. It will be apparent that fabrics for the tapes of slide fasteners must be constructed with care.

As shown in Diagram A, each metal tooth is provided with a projection on one face and a corresponding recess on the other face. The teeth are clamped onto the edges of the tapes in equally spaced relationships. This spacing, called the pitch, must be accurate to one-thousandth of an inch. The tapes with the spaced teeth are offset with respect to each other so that each tooth may be received between a pair of teeth opposite.

The slider is essentially a camming device, having a Y-shaped internal channel with slots along the sides to allow the tapes to pass through without hindrance. The teeth move into the slider through the outspread arm portions, and are meshed or interlocked with each other in the single stem portion of the Y.

As the slider is moved up, or in the closing direction, the teeth are confined on top and bottom, and the rear ends of the teeth are pushed by the slider so that the teeth mesh with each other, like the teeth on a pair of gears; only the flexible tapes permit the teeth to be meshed behind the slider in a straight line. In addition, the teeth remain meshed, because the projections are received within the recesses of opposed teeth. The reverse action is accomplished as the slider is moved down, or in fastener-opening direction.

The fine accuracy of the co-acting parts of a slide fastener will be appreciated when it is realized that the noses of opposing teeth must by-pass each other without interference in order to provide smooth interlocking with a minimum of pull-



Diagram A

The Editors desire to acknowledge the cooperation of the Conmar Products Corporation in the preparation of this article.

ing effort. On the other hand, the teeth must by-pass each other closely enough that the projections will be received within the recesses with so little play that the teeth will be prevented from disengaging no matter how much the meshed elements may be twisted to disengage them. The dimensional accuracy of the zipper's component parts must be extremely high in order to accomplish this seemingly simple operation. There are no less than sixty-two significant dimensions involved, a large number of which must be held to tolerances as close as one-thousandth of an inch.

To produce satisfactory slide fasteners requires the proper selection of materials, maintenance of dimensional accuracy of the component parts, and ability to reproduce the product with a high degree of uniformity. Where the number of fastener units produced per week runs into the millions, and the number of teeth that are attached to the tapes are literally in the billions, exacting manufacturing controls are required.

For Rugged Usage

After engineers worked with the industrial uniform and work-clothing industry, it became apparent that serviceable work-clothes fasteners had to be unusually strong — strong enough to withstand a cross-pull test of seventy-five pounds minimum (based upon a one-inch grab test across the meshed teeth). For such rugged usage, it was decided that No. 5 size teeth elements of brass were needed. Also, as part of the strength requirements, the tape had to have a filling strength of one hundred pounds, based upon the same test. As a result, a 7/16" tape was selected having a minimum of forty-four warp ends with fifty picks per inch of filling, and a weight of sixteen ounces per gross yards.

To be compatible with the non-shrinking properties of the garment, the fastener could not shrink more than 3% when subjected to a washing test containing soap and alkali for a period of forty-five minutes at 160°F. The tape had to be pre-shrunk to meet this requirement. Also, color fastness to laundering was essential.

Due to the comparatively heavy weight of the fabrics used in work-clothing, the fasteners had to be made to operate with a minimum of effort. A 2/2 twill weave was selected to provide unusually high tape flexibility so that with close dimensional controls upon the metal components, the fastener could be opened or closed with a maximum force of one lb.

Severe Endurance Tests

Finally, unusual or rough handling had to be anticipated. The fasteners had to be made to withstand an endurance test of 10,000 cycles, without showing any appreciable wear in any of the component parts. This was accomplished by the selection of rugged materials, coupled with careful manufacturing, and quality controls of the product throughout its manufacturing cycle. In this manner, the basic fastener for the industrial uniform or work-clothing industry was created.

Every industry which uses a slide fastener as a component of its product has its distinctive problem. Technological progress is based upon the recognition that each industry has vexing closure problems that may suggest a research program, the end result of which may provide a fastener that is unique and commercially advantageous in this highly competitive field of manufacture. This was found to be particularly true in the industrial uniform or work-clothing industry.

When a bakery truck driver or a gas station attendant has finished his day's work, he is usually in a hurry to get out of his work clothes. In removing his trousers, he may have only partially opened the zipper and the pull tab has moved to the horizontal position. If the slider is an ordinary pin or cam type, he may rip the teeth off the fastener in attempting to open the fly completely without lifting the pull tab. This occurs because the ordinary pin or cam is positioned between

a pair of teeth in locking the slider in place. Conmar's research staff has developed a slider to prevent such occurrences, the slider known as the *Friction Lock Slider*.

As shown in Diagram B, when the pull tab is in the down, or locked, position, the curled portions act as brake shoes, frictionally bearing upon the top surfaces of the teeth, instead of coming between them. These brake shoes always remain in frictional engagement with the teeth, except when the pull tab is lifted from horizontal to upright position. With the pull tab down, no amount of movement of the wearer can cause the slider to be dislodged. However, if the trousers are pulled apart at the waist with a force in excess of eight pounds, even without lifting the pull tab on the slider, the teeth will not be ripped off, and the fastener will open. In effect, this unique slider locks the fastener closed and provides a safety factor for opening it, though the user may not take hold of the pull tab in the usual fashion.



Diagram B

Another fastener type which was developed primarily for industrial uniforms is Conmar's *Dubl-Zip* fastener for work jackets (see Diagram C). With the usual separable jacket fastener, the jacket may either be opened partially from the top, or opened entirely with the edges down the front completely separated; it cannot be opened partially from the bottom. A truck driver or gas station attendant, when sitting or squatting, finds it desirable to relieve the confining pressure of a jacket closed at the waist without completely opening the jacket. By means of the *Dubl-Zip* fastener the jacket can be opened from the bottom as well as from the top to any degree desired, and still be completely separated when the wearer desires to remove the jacket. This fastener is provided with two sliders to accomplish this new result.

The *Dubl-Zip* fastener illustrates how one problem may lead to another, but the solution of it has even further benefits. In the earlier description of how an ordinary zipper operates, it was explained that each tooth has a projection on one side and a pocket on the other. This is the ordinary type of tooth

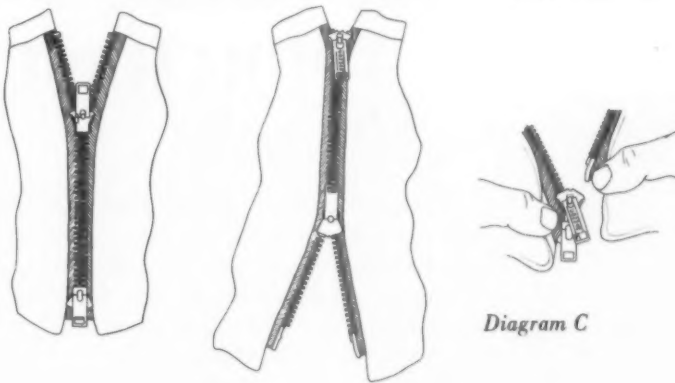


Diagram C

construction. A fastener made with such teeth, however, can use only one slider, and the slider must be oriented with its top or wide end facing in the same direction as the projections on the teeth. In order that a fastener may be opened and closed in both directions, or allow a pair of oppositely oriented sliders to move along the teeth, a wholly new tooth shape is necessary. The close-up of the teeth on the *Dubl-Zip* fastener shows that each tooth has both a projection and recess on each side. This tooth construction is known as a symmetrical double-acting tooth or scoop, and furnishes still another fastener type for the work-clothing industry; namely, the non-separating, double-acting coverall fastener.

The industrial uniform and work-clothing industry is a dynamic industry, always improving its manufacturing techniques and products. The work-clothes fasteners industry works hand in hand with it to create, improve, and change its techniques as this giant industry moves ahead.





The Passing of the OLD-TIME PURCHASING AGENT

Once upon a time the purchasing agent was the glamour boy who married the boss's daughter, but who turned out to be so inept and useless around the plant that no one would give him house room. Finally there was nothing to do but fix up a desk for him where he wouldn't be in the way, and put the sign *Purchasing Agent* on the door. Thus ensconced, Sonny Boy would proceed to buy paper clips and typewriter ribbons, but woe betide him if he tried to put in his oar in negotiations for chemicals, metals, fabrics, or other major industrial materials. A slap on the wrist from the department head in charge was bound to ensue.

Purchasing is a Management Function

Of course those were the days when the department head did his own hiring and firing, his own buying of machinery and materials, his own planning and master-minding of just about anything that came up. No more. Production techniques are too complicated and difficult, production materials too many and multifarious. Hence the management *team*, the planning board, the personnel department, the public relations department, and the purchasing department. When it comes to the latter, read what Revere Copper and Brass has to say in a recent advertisement:

"During the past twenty years the stature of the purchasing agent has risen tremendously. This is due in part to the fact that top management has come to realize that buying is not just a *how much* problem, but is a management function. Today the industrial buyer is generally recognized as a vital part of the company team, consisting of sales, engineering, production, and purchasing. He sits in on planning sessions. Sales, for example, wants a new model, or even a new product. Engineering discusses the design features that are wanted, and contributes its own imagination. Production makes close estimates as to costs of fabricating and assembling the various parts, says when it should be possible to begin shipment, and in what volume. Purchasing knows sources of supply, how reliable they are, how plentiful materials are, and what they cost. The company buyer may report

that one suggested material is in short supply, or another is a bit high in price, and may recommend a few changes with the object of speeding production without affecting quality. All these matters are debated by the four groups, because the problems of all are intimately related."

What manner of man is this modern purchasing agent, of whom so much is expected? It helps if he is handy with a slide rule, and he certainly should be adept at reading charts and graphs. If he doesn't know the major markets for the basic materials of his industry, Old Man Trouble will soon be scratching at his door. If it is a case of an expensive operation, typical of the larger companies in our important industries, the individual charged with all the various responsibilities loosely grouped under the single head of PURCHASING must be, or should be, something of an economist, traffic manager, engineer, statistician, analyst, and even stylist. Above all, he must be an organizer and a systematizer because no one individual can begin to know all the techniques, all the production requirements, all the markets and trade conditions which prevail.

Textile Purchasing a Job of Magnitude

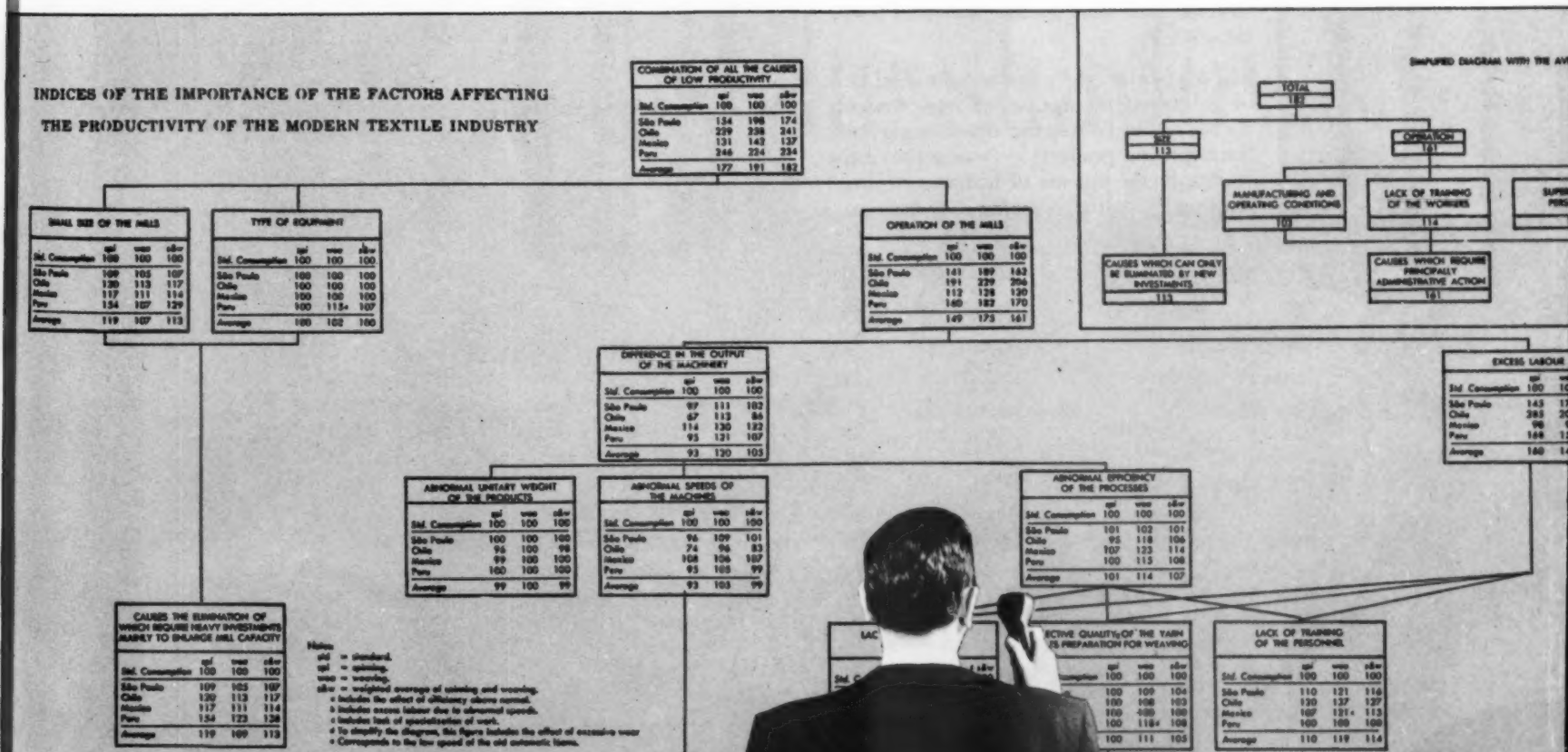
Textiles have been giving the P.A. one of his most acute headaches, especially since the advent of the new fibers and finishes. There is, from a practical purchasing point of view, a superfluity of *Johnny-Come-Latelies* on the market and, until very recently, a scarcity of reliable information about the performance characteristics of the new products.

Suppose you were P.A. for a large corporation that suddenly decided to branch out into a production project entailing the extensive use of upholstery materials. You were starting from scratch — without market information, without trade contacts, without testing facilities of your own, without a past history of company experience. Of course you would get the names of the leading mills in the field, and then you would begin to talk to their sales representatives; but think of the magnitude of the job of amassing the necessary information about the various fibers, blends, constructions, and special processes. Then consider the magnitude of the style problem in which you would finally find yourself snarled up, especially if you were called upon to place orders for finished products that would not be delivered to the consumer until 1954.

The Modern Purchasing Office a Business in Itself

The head of a strictly contemporary purchasing office, in a modern, streamlined operation of any size, probably has more fingers in more pies than any other department head. He gets less supervision, less assistance, and comes far closer to being in business for himself than the rest of the executive personnel. The old-time P.A., whose principal responsibility was to keep the stock neat and make sure that none of the reserve supplies of office forms ran out, would certainly gape with blank amazement at today's procedures.

END



Buying is a management function today requiring a high

degree of organizational ability.

WHAT'S ON THE HOSPITAL P.A.'s MIND?

WHAT ARE THE PROBLEMS of hospital fabric usage? How do the textile requirements of the sickroom differ from those of the hotel room or schoolroom?

There are many differences, but the most significant, perhaps, is that of staining. In a hospital room, food spilled, medications, nursing procedures, and the need for frequent supplies of fresh linen provide a maximum of wear and tear. Hospital textiles must be frequently laundered. To stand up under this usage, the fabrics must be rugged and durable.

Although fire is a hazard in all institutions, it is of vital concern to hospitals. The P. A. is interested, consequently, in all types of flame-retardant fabrics and processes. In many usages he has found Fiberglas a desirable substitute for combustible fabrics.

Another special hospital hazard is static, which has at times been the cause of operating room explosions. It is for this reason that many synthetics which are static accumulators are not approved for use in or near the surgical rooms. Some hospitals have even requested nurses not to wear nylon underthings while on duty.

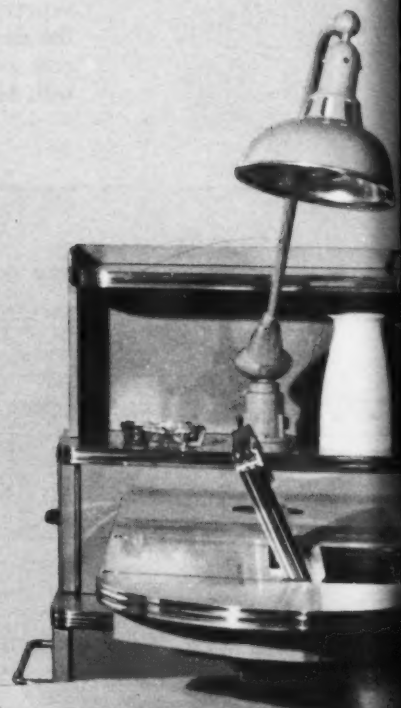
Many mills and laboratories have undertaken the development of fabrics which meet some of the hospital's special requirements. For example, Bates has just come through with a new mattress pad material so constructed as to have special merits for hospital use.

The hospital P. A. today has the dual task of following the course of new developments, and of finding the means to purchase the improved products — where they exist — despite the squeeze of budgetary restrictions and steadily mounting deficits.

For Hospital Use

An all-cotton pad, fully bleached, which needs less storage space, is easy to handle and fast-drying, has no stitching to break, has no possibility of lumping, and has less overall shrinkage.

By BATES FABRICS



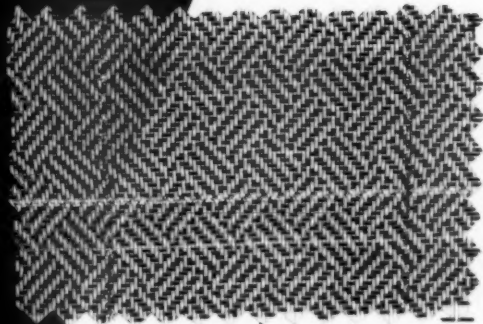


*America's smartest designers
are taking
automobile fabrics*

out of the shadows with

METLON

the non-tarnishing metallic yarn



*Metlon and Saran fabric, designed by
Hafner Associates for Buick Golden
Anniversary seat covers, through
Crest Manufacturing Co.*

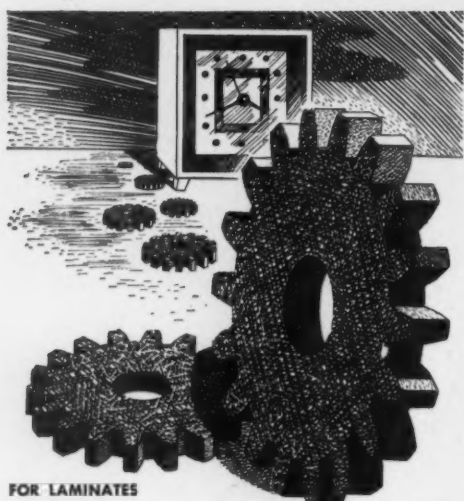
Two automobiles on exhibit. All eyes are on one of them. WHY?

Two upholstery fabrics in a swatch book. All fingers point to one of them. WHY?

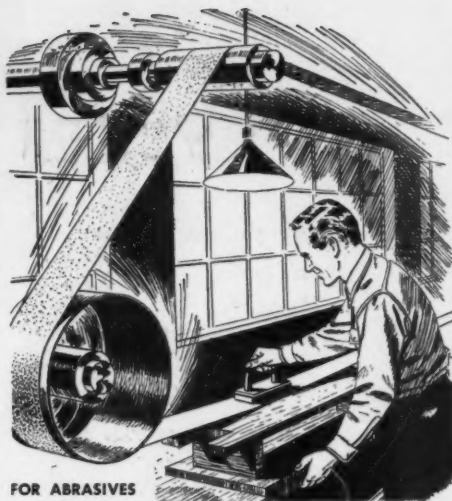
In each case one has glamour, sparkle, eye appeal. The other is commonplace. METLON is making just that difference. METLON, the non-tarnishing metallic yarn, has been "customized" to combine with virtually every other type of yarn and fiber . . . in exactly the effects desired by the creator.

Let METLON'S sales engineers show you the newest and most effective ways of using these miracle metallics in your particular line.





FOR LAMINATES



FOR ABRASIVES



FOR BELTS



FOR FRICTION TAPE



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FOR LUGGAGE

Industrial Fabrics for These and Thousands of Other Products

If your product, or your manufacturing process, requires any form of woven (or non-woven) fabric, you will probably find it is available from Wellington Sears.

Wellington Sears has been in the industrial fabric business for over 100 years, and has accumulated a vast storehouse of technical data on literally thousands of fabric applications. Moreover, we are developing new constructions every day to meet new needs in the rubber, fabric coating, mining, chemical, automotive and laminating fields—to name only a few.

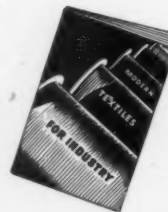
Whether your problem is conveyor belts, filter cloths, gear laminates, or supported plastic film for the uphol-

stery trade, our technical specialists will be glad to work with you and your organization.

So don't settle for a fabric for your purpose. Get the best industrial fabric for the purpose.

Get a Wellington Sears fabric.

Wellington Sears has prepared an illustrated 24-page booklet filled with valuable facts on fabric development and applications which will be of interest to present and potential users of industrial fabrics. Write for a free copy of "Modern Textiles For Industry" to Wellington Sears Co., Dept. 89, 65 Worth Street, New York 13.



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a value to

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a pleasure to

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a comfort to

WEAR



uniform shirts of

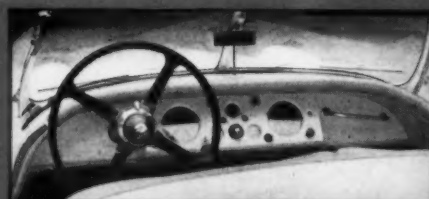
SIMPSON'S Soulette® POPLIN
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For long wear, good looks, comfort and economy, it's Simpson's Soulette® Poplin, the acknowledged fabrics for uniform shirts, used the country-over by leading industries. Your employees like to wear them because they're good looking, soft and comfortable. Made of the finest quality long-staple cotton, Simpson's Soulette® Poplin is vat dyed to give the fabric the highest degree of fastness to light and washing—Sanforized shrunk for permanent fit. When you buy uniform shirts made of Simpson's Soulette® Poplin, you know they fit well, wear well, stay neat and fresh-looking. When next ordering a supply of shirts for your uniformed employees, specify Simpson's Soulette® Poplin—the foremost name in poplin fabrics.

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NO SPEED LIMIT ON PROGRESS...



Today's cars have progressed a long way since their ancestors first saw the road. Inside and out, they're examples of America's great industrial progress.

And Burlington has kept pace with Detroit's demands for upholstery fabrics of quality, long-wearing luxury and beauty. Pioneers of synthetic fabrics, Burlington's blends are the result of the

never-ending research and rigid quality control of the world's largest and finest fabric laboratory.

Today's automotive upholstery, like today's cars, bears no resemblance to the fabrics originally used. Synthetics, as produced by Burlington, match the good looks and utility Detroit creates for today's market.

DETROIT LOVES PROGRESS — AND SO DO WE.

Burlington
Burlington Mills
"We've made the Life of America"

INDUSTRIAL FABRICS DIVISION 350 Fifth Avenue, New York 1, N.Y.

AUTOMOTIVE REPRESENTATIVES



GEHRINGER & FORSYTH

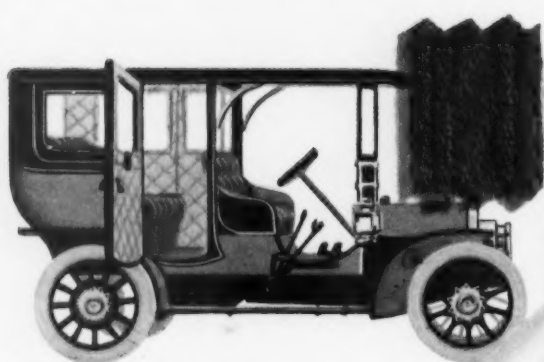
16151 James Couzens Highway, Detroit 21, Michigan

The thread of the story is LUREX

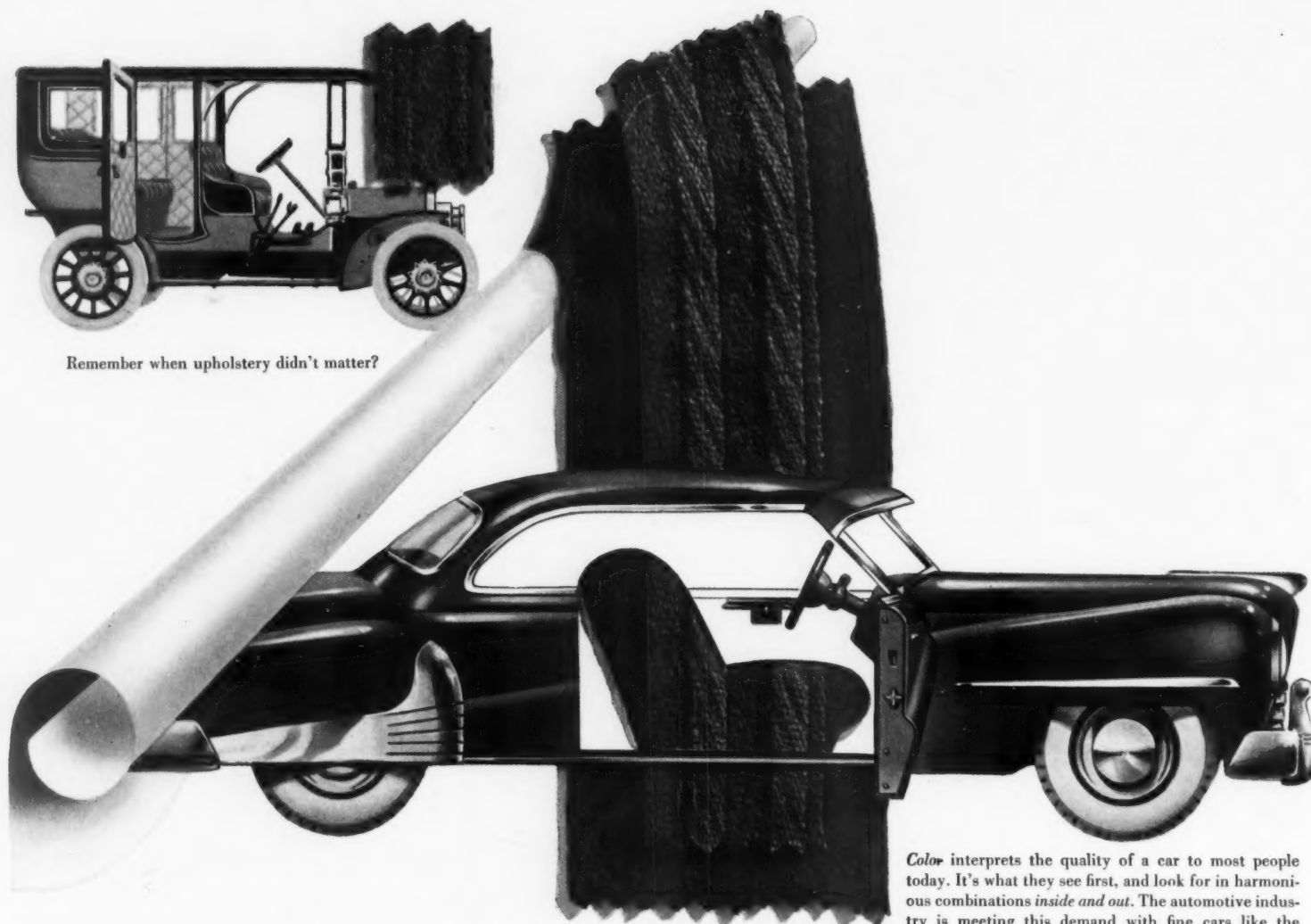
Lurex®...the modern living legend...now a part of modern driving luxury in Goodall's striking, silver-threaded automotive upholstery fabric. Lurex non-tarnishing metallic yarn is made only by *The Dobeckmun Company, Cleveland 1, Ohio • New York: 250 West 57*



The new Lurex-threaded Goodall fabric...in the interior of a 1953 Lincoln Cosmopolitan



Remember when upholstery didn't matter?



Color interprets the quality of a car to most people today. It's what they see first, and look for in harmonious combinations *inside and out*. The automotive industry is meeting this demand with fine cars like the hard-top model pictured here. Every interior feature, from upholstery and carpeting to all visible metal parts, has been carefully planned to blend with the two-toned body.

They're sold on **COLOR**

Helping one's customers sell *their* customers is just good business. That's the way the first Chatham figured when this company was founded as a small family enterprise over seventy-five years ago. Now Chatham is one of

America's great mills, but thinking in the buyer's interest is still regarded as a matter of family pride with the fourth generation of Chatham sons.

And family pride is a very good guarantee of quality.



This Chatham upholstery fabric and bolster fabric were especially designed to co-ordinate with the colors of the car shown above. They're just one of Chatham's many beautiful new patterns in long-wearing nylon, wool and nylon mixtures, worsted, and woolen broadcloths—all big selling points at a time when the public is sold on, and by, *color*.

Chatham Manufacturing Company, Elkin, North Carolina • Automotive Fabrics Representative: Getsinger-Fox Company, Detroit



High-style automotive upholstery fabric which uses Lurex metallic yarn against a charcoal grey nylon ground to give brilliance and understated luxuriousness. Constructed with 53% nylon, 37% cotton, and 10% Lurex yarn, the fabric combines rich three-dimensional textural interest with slidability and good tailoring and long-life qualities. This is a fabric developed in conjunction with the Ford Company's Styling Section for the 1953 Lincoln Cosmopolitan, BY GOODALL FABRICS.

Developing Trends in Automobile Fabrics

The changes in automobile fabric design correspond to the car's own evolution, but they keep pace with the trends in decorative and apparel fabrics too.

FROM THE MOMENT that the interior decorators began to use bold and brilliant colors, with no holds barred, the bell began to toll for drab automobile interiors. The old rule for automotive upholstery used to be: any color so long as it is either grey or taupe, and any pattern so long as it is a stripe. With this old style went interiors that were poorly lit, providing dark corners where the fabric was unnoticed.

Naturally the automobile manufacturer has been influenced in his choice of colors and fabrics by the increasing use of high shades and unusual colors in furniture upholstery and in decorative fabrics. Naturally, too, the emphasis on texture interest, that has been one of the dominant factors in fashion trends and in apparel fabrics, has carried over into the *gracious living room on wheels*, which our best automobile interiors have become, to all intents and purposes.

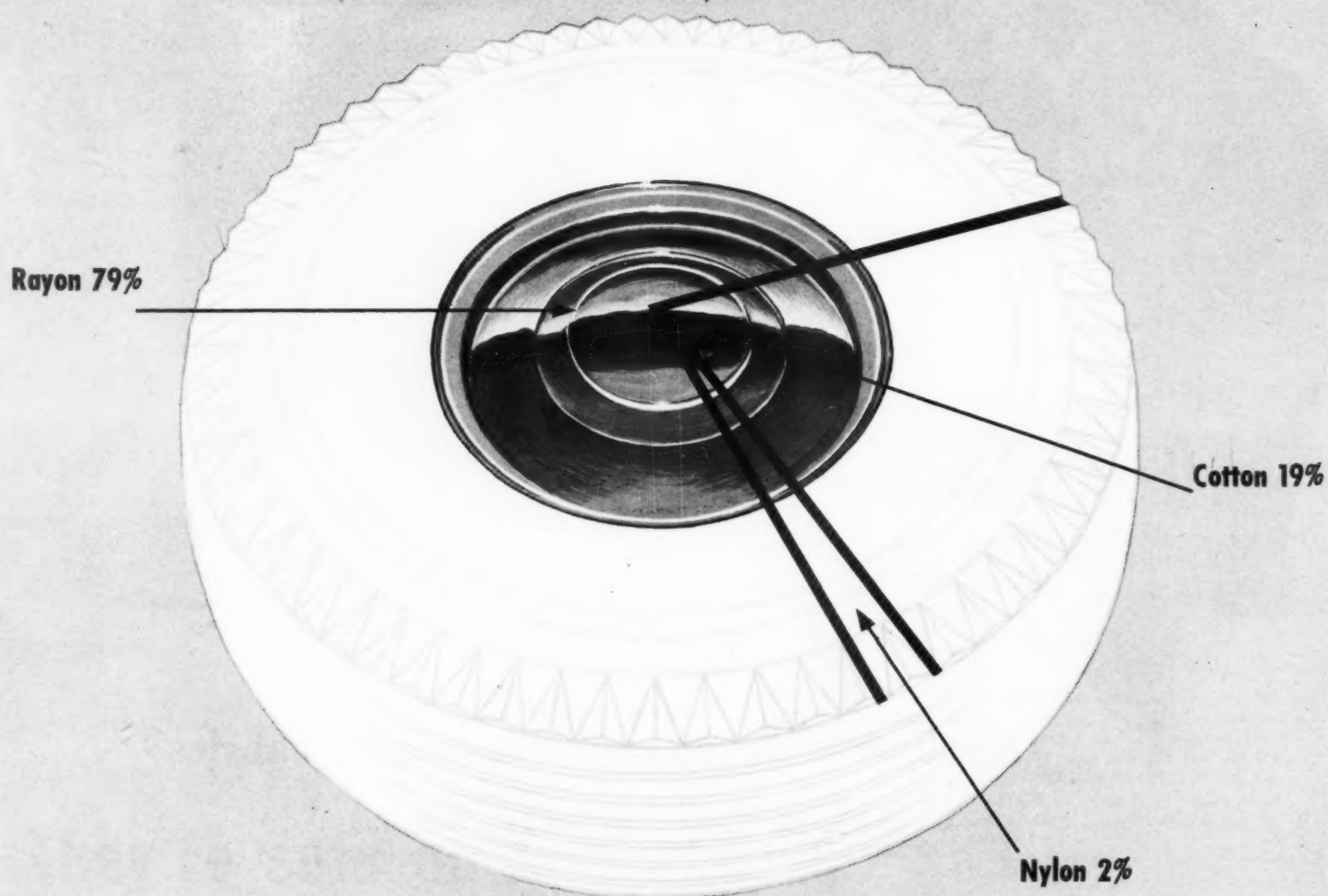
The evolution of automobile upholstery fabrics has shown the way to combine these two trends. The use of nylon facing, for instance, and the development of special weaves and styling, has made it possible to build into the same fabric the quality of *slidability*, demanded by the consumer, with a pattern that displays both refined coloring and three-dimensional texture interest. In addition, this fabric has good tailoring ability

and long wear life.

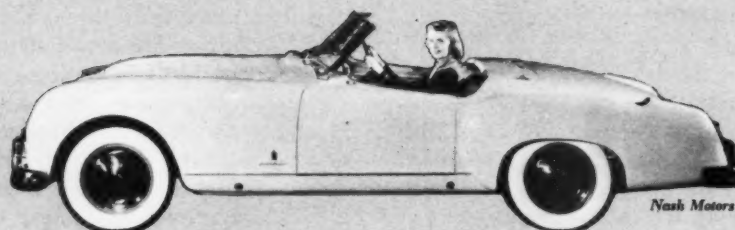
By all odds, however, the greatest influence in the automotive color revolution is the hard top convertible. With this has come a two-tone color scheme and an increase in the glass area, which has finally done away with ill-lit interiors. Result: the fabrics — and not only the upholstery, but the sidewall and floor covering fabrics — are clearly visible from inside and the body character of the interior is also easily seen from the outside, as a part of the whole styling of the car. This means that Mrs. Automobile Owner (who really makes the buying decisions) has become more conscious of the fabrics used in her car than ever before.

In this new development there is both a stricter limitation and a greater freedom for the fabric designer. The limitation demands that the fabric shall be styled as part of a whole scheme, including a two-tone exterior, and this has led to the package concept of color schemes replacing the choice of upholstery colors. The freedom lies in this, that by upgrading the whole overall styling, bright colors and materials that would have looked gaudy or garish in the old days today look rich and beautiful, because they have become a part of a harmonious whole.

Relative Importance of Rayon, Cotton and Nylon in Tire Cord — 1952



TEXTILE YARNS add Toughness and Durability to America's Auto Tires.



Rayon Cord for Tires

As strong as steel in tensile strength, the rayon used in tires has come to be known as high tenacity rayon. So important is it in the construction of automobile tires that it accounts for about 80% of all fiber used in tire cord today.

TO GRASP THE QUALITY of the problems facing the modern automotive tire engineer, it is helpful to visualize an architect working with flexible steel and elastic and plastic concrete to develop a building which could, without damage, bend to the ground under the force of a hurricane and withstand, without melting, the concentrated heat of the tropical sun.

To evaluate what is being done in this field we need to glance back through some decades to the earliest rubber tires. These at first were solid tires of natural rubber; when pneumatic tires were introduced makers often used steel studs on the tread to give a longer wear life. In those days the life might be no more than two hundred miles. Nevertheless, as long as speeds and mileages remained low, the natural materials of rubber and fiber served their purpose very well.

It was with the coming of higher speeds and heavier loads at the end of World War I that a new factor — the internally generated heat caused by flexing and pounding on road — entered the picture. Thus the need arose for a tire both lighter and thinner, which could disperse the heat more rapidly, remain cooler in running, and last longer.

In 1929 an idea for a new solution to the problem occurred at almost the same time to the tire manufacturers and the makers of rayon. This was that the newly developed man-made rayon fiber might provide the strength necessary for a lighter build.

As research was begun and progressed, the problems to be faced became clear; and they were many. Among them were: the manufacture of a cord of high tensile strength, the satisfactory bonding of rayon with rubber, and how to render the cord tough enough to stand constant flexing and to resist fatigue.

First Commercial Production

A number of years passed before these problems, and others which arose, were overcome sufficiently for a rayon cord tire to be placed commercially on the market.

By that time loads and operating speeds had once again risen; it was claimed, however, that the new tires gave fully adequate performance under existing conditions. By the outbreak of World War II in Europe, a number of rayon producers were in the tire cord business, making high tenacity yarns to be incorporated in the tires for heavy goods and passenger transport vehicles. At that moment this activity assumed a new and vital significance.

During the period between the outbreak of war in 1939 and the entry of the United States into hostilities, further advances were made. The ability to build lightweight but tough tires led to the use of rayon in landing-wheel tires for military aircraft. Its gradually increasing use also spread to passenger cars. It was recognized that in time of war rayon had a vital defense role.

When America entered World War II, she was immediately cut off from all supplies of natural rubber. Though heavily stockpiled, rubber became a most precious defense material, and the development of synthetic rubber manufacture mushroomed.

In order to make possible the use of the highest obtainable percentage of synthetic rubber in tires, the problem of cool running had once again to be confronted. Heat standards which were

satisfactory with natural rubber were not valid with synthetic products, and it was therefore necessary to again revise ideas about tire structure. The walls would have to be made thinner



than ever and yet stronger for the rough usage of war service.

The key to this situation lay with the rayon manufacturers, for only rayon could provide yarns with the necessary high tenacity and resilient strength in the quantities which expanded programs demanded.

Initially the War Production Board figured its requirement at fifty million pounds a year, divided among five producing companies. This estimate proved to be just the starting point of a vast expansion program. By 1945, in addition to greatly increased production capacity, much of the textile rayon yarn production had been converted to high-tenacity output. With the existing high-tenacity plants they were able to give an annual output of almost three hundred million pounds.

Tremendous as was the war-time achievement of the rayon industry, on the cessation of hostilities even greater efforts were called for. Tires made for war purposes had advanced technically beyond any that had been made before the war. With the switch to civilian production, the automobile industry demanded tires in tremendous volume, incorporating all the latest improvements. It appeared that a further increase of rayon producing capacity would be justified.

In the course of the next six years, the output of high-tenacity rayon again doubled. By 1952, the figure had reached a still greater annual volume and continues to rise.

Price Stability

So far we have considered only the mechanical requirements of tire building. As with other items purchased by Detroit, however, price stability in tires is a valuable asset and the use of rayon makes a contribution in that direction. Purchases of tires are scheduled far ahead and costs are counted in decimals where the demand for one type runs into millions of units.

The tire market is essentially one of the most stable; tires are bought, wear out, and are replaced in accordance with the tempo of the whole life of the nation. In this country one privately owned motor vehicle is registered for about every three persons. Replacements for all these vehicles account for roughly 60% of all

(please turn)

Key Stages in the Making and Use of Rayon Tire Yarn



Spruce, pine and hemlock trees, or cotton linters, furnish the basic cellulose for tire yarn.



The cellulose is purified and reaches the plant in white sheets which are first steeped in caustic soda.



After being dissolved into liquid form, the cellulose is forced through a spinneret forming filaments.



After spinning, the yarn is washed and all the residual water is extracted from the cakes.



The yarn is used to build tire fabric which will form the foundation for the walls and tread of the tire.



After the plies of rubberized fabric have been built up, the tread stock is added to complete the building operation.

Rayon Tire Cord . . . concluded

the tire shipments made for replacements. New vehicles account for another 35%.

Behind production on this scale there inevitably stands a very fine engineering operation, most of which is embodied unseen in the interior parts of the product. All the dimensions of cord employed, with its torques, strains, and stresses, have to be calculated by tire engineers to tolerances as precise as those for steel machine parts. From the designer's drafting board to the end of the production line, the operation is one demanding precision. And the problems to be solved are more complex than those of structural engineering, for the materials are flexible and the strains to be met are dynamic instead of static.

The auto tire industry presents an interesting case of textile engineering which has not existed at any period as it exists today. It is an engineering in which natural materials are being replaced by man-made ones, custom-built to order and at a price which will compete with anything that nature offers. And it places one more stone in the building of a self-contained economy wherein uncertainties of seasons and crops are eliminated in the interest of abundance for the many.



Here the finished tire is being removed from the mold after the vulcanizing operation, ready for shipment to the customer.

Photographs courtesy American Enka Corporation

Compilation of Terms

relating to

Industrial Textiles and Materials

PART II . . . conclusion

MACHINE BUFF: See Upholstery Leather.

MAILBAG DUCK: Several numbers of duck are used for mailbags and other carriers; usually made with some sort of colored striping for identification purposes.

MANILA HEMP: Grown chiefly in the Philippine Islands, it belongs to the banana family and grows to the size of a small tree. The fiber is obtained from leaf stalks which form on the trunk of the tree. When compared with sisal, the fiber has greater diameter, is not so stiff, and is stronger. Russian hemp is the strongest; Italian is the finest in diameter. Abaca is another name for this type.

MARKET BLEACH: The particular bleach desired for a specific fabric use in the trade.

MAT FINISH: The smooth, dull finish found on upper leather. Is not necessarily smooth finish on other types of leather.

MATERIAL: 1. The units, parts, portions, or substances of which an article is made or can be made. 2. Synonymous with goods, fabric, cloth, stuff, etc.

MATT FIBRO: The dull type of viscose rayon staple fiber produced by Courtaulds, Ltd.

MATTRESS DUCK: Implies single-filling flat duck.

MELAMINE RESINS: Made by reacting melamine with formaldehyde; the resulting product and some of its derivatives may be used for textile finishes to provide shrinkage control, wrinkle-resistance, crispness, soil-resistance, etc.

MERCERIZED SEWING THREAD: The trademark for J. & P. Coats Co., and Clark's O.N.T. Boilfast mercerized cotton thread, a three-cord thread made in a wide range of colors.

METALLIC THREADS: Popular since the Middle Ages, these threads have luster, tone, and brilliance when placed on a plain background material. They are used in decorative fabrics, brocade, brocatelle, damask, and in evening apparel. Woven screen wire for doors and windows, Pullman screening, fencing, chicken wire, ranch fencing, and garden wire may also be considered as made of metallic threads.

METER LEATHER: A specialty leather prepared from selected sheepskins of non-porous nature. Used for measuring bags of gas meters.

MILIUM: Trademark of Deering, Milliken & Co., Inc., for metal-insulated fabrics. Practically any fabric of natural or man-made fibers, or blends of these, can be metal-insulated, using as a radiant heat barrier aluminum or similar metal flakes in a resin base. These porous, metal-insulated fabrics allow the body to breathe freely, provide insulation against cold, and prevent the loss of body heat. In summer, they reflect the sun's rays, thus keeping the wearer cooler.

MINERAL TANNAGE: Leather produced by the use of chromium salts, alum, and comparable agents other than vegetable tannages.

MOCHA LEATHER: See Glove Leathers.

MODIFIED CELLULOSE FIBER: A fiber made by incorporating a synthetic resin, casein, etc., in a viscose spinning solution, produced as staple with a soft handle and dyeing properties like wool. It is also referred to as basified wool.

MODIFIED STAPLE FIBER: Acetate or rayon staple fiber or spun yarn treated to produce wool-like properties in the product.

MODIFIED VISCOSE STAPLE: Viscose process staple which contains a small percentage of casein to give wool dyeing characteristics. Rayolanda is the British trade name for modified viscose staple fiber; Cisalfa the Italian name for the product.

MOISTURE EQUILIBRIUM: The condition reached by a sample when it ceases to take up moisture from, or give up moisture to, the surroundings.

MOISTURE PERCENTAGE: This is found by definite prescribed methods and is stated as a percentage of the weight of the sample in either the original or the oven-dry state, as found in a conditioning oven used for the purpose.

MOLESKIN CLOTH: A one-warp, two-filling rugged cotton fabric in which there is a two-and-one face filling arrangement — two picks of face filling to one pick of back filling. Made in satin construction, the cloth is given a thick, soft nap on the back to simulate mole fur. Used for coat linings, semi-dress trousers, and work clothes.

MONOFIL. MONOFILAMENT: A single large filament from the man-made fibers of acetate or rayon, or from synthetic fibers such as nylon, Orlon, Dacron, Fiberglas, etc.

MONOPLEX 11: Plasticizer for polyvinyl and copolymers for use in coated fabrics, luggage, rainwear, shower curtains, and upholstery. The product is a dialkyl ester of a synthetic long-chain dibasic acid which shows high plasticizing efficiency in polyvinyl-chloride stocks, with temperature and

ultra-violet resistant properties at much lower volatility than is usually found combined with such solvating action. Treated products drape well.

MONOPLEX 16 FINISH: A high molecular weight nitrile plasticizer which yields polyvinyl-chloride stocks of superior heat and ultra-violet stability, excellent permanence, good low temperature flexibility, and very low water sensitivity. The relation of temperature to the solvating action of Monoplex 16 is ideal for dispersion compounding. Product of Resinous Products & Chemical Co.

MOROCCO LEATHER: The distinctive, natural grain, vegetable-tanned fancy goatskin, to which the name is properly restricted. Originally implying this type of leather from Morocco only, the term now includes all goatskin leather. Its application to anything but fancy leather is incorrect, but the term has become so prevalent that it has now become necessary to use the word *genuine* to designate the true leather. Morocco grain is applied to embossed imitations of the natural goat grain of other kinds of leather.

MOSQUITO NETTING: Used for screening and netting, it is a heavily sized, plain or barred cloth which is referred to in terms of meshes to-the-inch, such as 12, 18, 36, etc. The more meshes, the better the fabric. It can be bleached or dyed.

MULTIFILAMENT YARN: A yarn which has two or more filaments; the normal multifilament range used by throwsters is from 7 to 75 or 90, depending on the type of yarn.

MUSLIN: A plain woven substantial cotton fabric, stronger and heavier than longcloth; only the poorer qualities are sized and the calender finish effect disappears after washing. Wide muslin is known as sheeting. It can be given a white goods finish on print cloth and sheeting, or may be pure-starched or back-filled to give a dull or *cloth* finish. Grey print cloths and lightweight sheetings are also known as unbleached muslin.

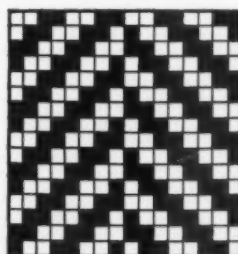
Fine muslin is made of combed cotton yarn, soft-finished, mercerized, and printed. It comes unbleached, semi-bleached, and full-bleached, depending on the use to be made of the goods. Muslin has many finishes applied to it from the sheeting or muslin grey goods state — batiste, cambric, chintz, cretonne, lawn, longcloth, mercerized, nainsook, organdy, percaline, Schreinerized.

MUSLIN SHEETING: A carded yarn, plain weave sheeting made with strong, compact tape selvages. It comes in a variety of constructions from 56 x 44 to 72 x 76. 18s to 30s yarns are used to make the cloth, which is finished anywhere from 48 inches up to 120 inches. Usually bleached and finished with little sizing, used for sheets and pillow cases.

NAPA LEATHER: See Glove Leathers.

(continued)

Broken twill $\frac{2}{2}$
8 right hand
8 left hand



Industrial Textile Terms . . .

NARROW DUCK: Used for conveyor belting, small sails, etc., the term implies Number duck which varies in width from six to twenty inches. Weight is similar to that of Sail Duck.

NARROW FABRICS: General term for any fabric woven on narrow fabric looms — Christmas ribbon, bandoleer webbing, or tape, webbing, etc. Some narrow fabrics may be woven in great numbers on certain looms; it is possible to weave as many as 144 of very narrow goods. The term applies to fabrics one-half inch to 18 inches wide.

NARROW GOODS: Cloths 27 inches or less in width are called narrow. Nine inches equals one-quarter; hence, fabric known as narrow is a *three-quarter* goods. Fabrics in this field include webbings and ribbons woven on narrow fabric looms, where it is possible to weave from 96 to 144 pieces of fabric at one time on either straight or circular battens, swivels, or shuttles. The term in the cotton trade signifies any fabric under 40 inches wide.

NARROW SHEETING: Sheeting to be used for converting and industrial purposes is generally forty inches or less in width. Made in many constructions, there are three general groups which are based on the counts of yarn used. 1. Coarse yarns from 1/10 to 1/15; 2. Medium yarns from 1/16 to 1/21; 3. Lightweight yarns from 1/22 to 1/29.

NETTING: A light or heavy weight, open-weave, knotted fabric. The knots come in each corner of the square. Ranges in weight from very sheer to heavy fabrics, from fine nets to fishing or laundry nets. Made of cotton, rayon, silk, vinyon, nylon.

NURSES' CLOTH: Stiff, firm, white cotton cloth made with a left-hand twill weave of small repeat. Given a linen-like finish, it serves as nurses' uniform fabric. The name is also applied in England to white woven cotton material made with white stripes on blue ground.

NYLON: The generic name chosen by E. I. du Pont de Nemours & Co., Inc., for a group of protein-like chemical products classed as synthetic linear polymers. The term nylon includes a vast group of chemically related products, the physical properties of which differ considerably.

Of especial interest to the textile industry is nylon in filament yarn form; this is made from a polymer in flake form which is melted and forced through a spinneret. It is produced in deniers ranging from 10 to 210, with an individual filament size of about 3 denier.

Nylon staple fiber is used in men's hose, knitted garments, rugs and upholstery, and for blending in durable suiting fabrics such as play clothes, sportswear, uniform fabrics and work clothes.

NYLON BRISTLE FILAMENT: One form in which nylon is manufactured is called the monofilament form; that is, one single solid strand. This covers all nylon filaments .050" in diameter or over. One of the main uses for these monofilaments, after cutting into required lengths, is for bristles in toothbrushes, hairbrushes, and industrial brushes of many kinds.

OFFAL: The less valuable parts of hides and skins — head, shoulders, belly — are known by this collective term. In this sense, however, offal does not mean waste since, in the heavy leather field, these parts are separated and diverted into special uses.

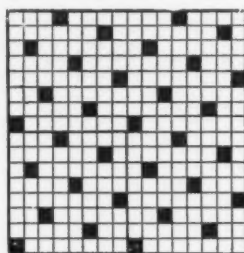
OIL BELT DUCK: Compactly woven fabric made of ply yarn that is not higher than 8s in yarn count. It comes in various widths, but is usually a 32-ounce fabric with the weight figured on the square yard basis.

OIL TANNAGE: Tanning with animal oils, such as used in the manufacture of some soft leathers, particularly chamois and certain types of buckskin. Fish oils are much used in the treatment.

OILCLOTH: Material which is treated with linseed oil varnish to give a patent leather effect. When used for tablecovers or shelf covering, it may be given a satin-like sheen and finish and is made in printed designs or plain colors. Also used for waterproof garments for outerwear, book bags, covers, belts, bibs, pencil cases and other containers, surgical supplies, bags, and luggage.

OILED SILK: Silk sheer fabrics in the gum state may be treated with linseed oil, at high temperature, then dried and made waterproof. The linseed oil oxidizes to a hard, smooth, translucent surface. This pliable cloth is used for medical supplies and raincoats.

OIL-LESS HESSIAN: An English jute fabric guaranteed to have less than a fixed percentage of oil. Soap and soluble oil are used as the softener, while the dressing mixture contains only flour and farina. It is used for filter fabric.



8-end
satin
base of 3

OILSKIN: Cotton, linen, silk, man-made, or synthetic yarn material which has been treated with linseed oil varnish or pigment in varnish. In plain colors, the fabric is used for rainwear and sailors' clothing; in printed effects it has several household uses.

OIL-TREATED FABRICS: These cloths are given a linseed oil processing to make them waterproof. Several cotton cloths serve as the base fabric — sheeting, muslin, printcloth, lawn, and kindred cloths. Silk and a few of the synthetic fiber materials can be oil-treated. The main uses are for slickers, ponchos, and other waterproof garments.

OZZE LEATHER: See Suede Finish.

ORLON: A textile staple fiber or continuous filament produced by the E. I. du Pont de Nemours Company. The raw materials which may be used for Orlon include coal, air, limestone, natural gases, petroleum, water. The product is a fiber based on a polymer of acrylonitrile and therefore is classed as an acrylic fiber.

Features of Orlon include resistance to sunlight and atmospheric gases which makes it ideal for awnings, curtains and other outdoor uses; stability, little or no shrinkage in fabrics, a soft, warm hand, and good drapability. The same washing techniques and ironing temperatures as used for acetate rayon and nylon apply to Orlon.

The filaments have a tensile strength which corresponds to from 60,000 to 75,000 pounds per square inch when dry, and the strength is almost as good when wet. The fibers have good elasticity and low moisture absorption. Orlon is resistant to chemicals, chiefly acids, and it has the ability to withstand high temperatures, thereby providing suitability for various industrial uses. Orlon, in staple form, can be used alone or blended with the major textile fibers, either natural or man-made.

OSNABURG: A coarse cotton cloth, often made with part waste, of plain weave, medium to heavy in weight, and resembling crash. It is named for the city of Osnabruck, Germany, where it was first made. When sold, either the term P.W. (part-waste) or the term *Clean* is stated. Some of the fabric, because of the dirtiness of the waste used, is sold as Grade B Osnaburg. P.W. cloths are made with red-tinged cotton. Motes, dirt, and card wastes are found in the dingy, off-color cloths.

In bleaching, however, all impurities may be bleached out and the fabric will resemble a coarse yarn linen.

Widths vary from 28 inches to 60 inches; textures range from 20-square to 40-square; warp yarn counts run from 5s to 14s, while filling yarn counts may be as low as 4s and as high as 12s.

In the grey state, some of the uses of the cloth include bags, box spring covers, mattress coverings, shoe linings, pipe coverings, tire linings, and bases for linoleums and imitation leathers.

Finishes applied to Osnaburg include chased or beetled in pocketing and simulated linen fabric, elastic duck, mercerized, napped, canvas, printing-crash finish, and cretonne.

The best types may be classed as coarse sheeting. The heavier qualities are sold on the ounce-per-yard-weight while the lighter cloths are sold on the yard-per-ounce weight. Narrow widths, with colored selvages, are used for toweling.

OUNCE: In the leather industry, it indicates the weight or the substance of certain kinds of leather, such as bag or case leather. In theory, it is based upon the assumption that one square foot of leather will weigh a certain number of ounces and will uniformly be of a certain thickness; hence, a three-ounce leather theoretically would be one square foot of leather that weighs three ounces. In practice, this varies because of specific gravity of various tanning materials used, and for this reason a splitter's gauge has been adopted which controls the commercial thickness of leather when sold by the square foot.

OVERALLS: A loose fitting trouser constructed with bib, pockets, and top straps. Denim, hickory stripes, express stripes, and cottonade are used for this long-wearing, rugged work garment.

PACK CLOTH: A general term that signifies burlap, canvas, duck, or mail bagging made to be used as some sort of bag or container in which articles may be carried or shipped.

PAINTERS CANVAS: A fine, corded woven fabric made of cotton or linen with one side ribbed and the other side simulating knit fabric.

PAPER CLOTH: The use of paper as a textile yarn came into being during World War I when the Austrians and the Germans began to use it for clothing and shoes. Thin sheets of paper pulp were cut into narrow widths and then twisted into a yarn. As yet, the use of paper is not practical although some cheap mats and rugs are made with paper filling. Developments are being made in the use of paper and long, individual fibers of cellulose extracted from wood. These fibers resemble cotton and may be manipulated in somewhat the same manner as cotton.

One of the drawbacks to the use of paper is the fact that it cannot be laundered. However, possible uses of the fiber include cord, curtain material, clothing, shoes, matting, bagging, etc.

PAPERMAKER'S FELT: Made from the best merino wool, this woolen fabric with a characteristic blanket finish is used in the manufacture of paper and on newspaper presses.

PARACHUTE FABRIC: A compactly woven, lightweight fabric comparable with airplane cloth. It is made of silk, nylon, rayon, or cotton. If the cloth is to be used for personnel, it is made of silk or nylon; rayon or cotton is the fabric used as a carrier for bombs, cargoes, etc.

PARAFFIN DUCK: Canvas or duck that has been treated with a paraffin preparation. It is stiff, heavy, and waterproof. It is used for coats and trousers by loggers, lumbermen, hunters, and fishermen. Some of the fabric is used as tent material.

PARCHMENT: A tawing process applied to sheepskins. Vellum is about the same as parchment except that it is made from calfskin. In addition to

its use as parchment for records, it is also used for banjos and drum heads, lampshades, etc.

PARCHMENT COTTON: A plain weave cotton fabric of fine structure which is treated in finishing to simulate true skin parchment.

PATENT LEATHER: A common term which implies the finish produced by covering the surface of leather with successive treatments of daub and varnish, each of which must be carefully dried. The term is often loosely applied to any leather that has been given a varnish finish, but the best usage of the trade restricts it chiefly to shoe and bag leather. This leaves the terms *enameled* and *japanned* to describe the fancy and upholstery leathers made by the same or kindred processes. In the shoe trade most of the patent leather used comes from cattlehides, known as patent sides, or kips. At present horsehides, coltskins (known as patent colt), kidskins, and calfskins are used.

PERLON: A polyamide fiber similar to nylon; made in two to twenty denier filament sizes and in staple cut lengths which range from 1-9/16 inches to 6-inch lengths. Perlon can be made in bright, dull, and extra dull lusters. Product of Farben-Fabriken Bayer.

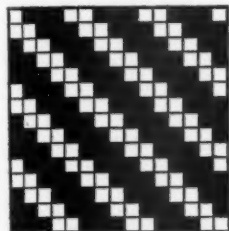
PERMEABILITY: A term used to show the ability of air, gas, water, and so on to pass or flow through the interstices between threads or yarns used to make a textile fabric.

PERSIAN MOROCCO: The name applied to hair sheepskins with Morocco grain, natural or embossed. It is a misnomer in the bag trade when applied to sheepskins and in the book trade when applied to goatskins as distinguished from *Turkey Morocco*. The term should be confined solely to hair sheepskins.

PERSIANS: The India-tanned, hair-sheepskin leathers. The term, strictly speaking, should be confined to India-tanned sheepskins, although it formerly included goatskins. Leather from the issue of cross-breeding goats with sheep is sometimes known as Persian.

PIANO LEATHERS: A blanket term for the many types of highly specialized leathers used for various purposes in the manufacture of pianos. These leathers are made of selected skivers, full-grain sheepskins, or deerskins.

PICKER LEATHER: There are various types used in textile plants. They may be very soft and mellow, or tough, heavily stuffed steer hides, like comber and gill box apron leather. Picker or check straps are often made from a glycerine tanned rawhide which is a strong and pliable leather. For loop pickers a belting leather is often used, and for



Left hand
twill $\frac{3}{2}$

heavy-duty pickers a hard rawhide, usually made from buffalo hides, is used.

FIG: See Glove Leathers.

PIGMENT FINISH: This denotes leather whose surface is coated with a material that contains pigment or other opaque material.

PIGMENTED YARN: A dull or colored yarn spun from a solution in which pigment has been added.

PILLOW TUBING: Woven on a cam loom, this cotton double-cloth is stitched while weaving on both sides, forming a tube. The cloth is bleached, cut into required lengths, and sewed at one end

while the other is open and hemmed. Widths are from 18 to 24 inches, and circumference runs from 42 to 45 inches. Carded yarn is used chiefly, and the texture is good and compact.

PIN SEAL; PIN GRAIN: Either term is applied to natural grain or high grade sealskin tanned for fancy leather. The effect is simulated on sheepskin, goatskin, calfskin, and cowhide, but they should be described as *pin-grain sheepskin*, etc.

PITCH: The average number of pile warp ends that are counted in the filling or weft direction of a floor covering.

PLAIN GAUZE: A doup-woven cotton where the crossing threads cover the base warp threads always in the same direction. Used for bandages.

PLASTIC: Any material, natural or synthetic, which may be fabricated into a variety of shapes or forms, usually by the application of heat and pressure. A plastic is one of a large group of organic compounds synthesized from cellulose, hydrocarbons, proteins or resins, capable of being cast, extruded or molded into various shapes. From the Greek *plastikos*, which means *fit for molding*.

PLASTIC GOODS: Materials in sheet form, not woven, that are used for shower curtains, draperies, umbrellas, etc. They are either transparent, or white, or dyed in solution. Trade names include Krene, for shower curtains and draperies; Vynylite, for raincoats; Pliofilm, which has many similar uses.

PLASTYLON: Made of glass wool and miscellaneous waste fibers in long staple form. In wool and cotton combinations, it is processed into upholstery materials. Elasticity and heat- and moisture-resistance are good, and the tensile strength compares well with nylon.

PLEXON: Plastic coated yarns which have unusual tensile strength, flexibility, and adaptability. They can be made in a variety of deniers, types, and colors. Their resistance to water, mild acids, and perspiration is a great advantage in their use. Many types of fabrics may be made from them: woven, knitted, braided, crocheted, and knotted, and the yarns have been used successfully in the manufacture of handbags, belts, shoes, draperies.

PLEXON PIGTAIL: A pliable, colored plastic coated wire which has many uses in industry and is also used for decorative purposes. Pigtail is used by florists to bind corsages and for decoration; also used in boutonnières, buttons, jewelry, millinery ornamentation, etc. Waterproofed and unaffected by weather conditions.

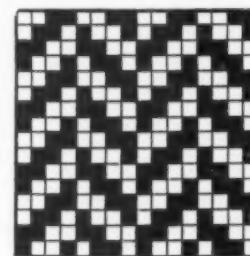
PLICOSE: A heavy waterproof rayon fabric which remains soft and supple after treatment with a special chemical to render it impervious to dust and dampness. Plicose can be sponged with a damp cloth over the surface for cleaning. The dyes used on the material are sun-fast. The fabric is coated on one side with a pyroxylin plastic finish.

PLY: 1. The number of individual yarns twisted together to make a composite yarn; a *six-ply sevens* would mean that six single yarns of a count of seven are plied together to give a composite yarn of 6/7s. 2. When the term is applied to cloth it means the number of layers of fabric combined to give the composite fabric. A three-ply webbing would mean that three single cloths are plied together by stitching to give the finished fabric.

PLY WEAVE: Any cloth made from more than one set of warp and filling threads may be classed as being made on a ply weave construction. In the narrow sense, however, the term is used to signify cloths made of two or more sets of warp and filling threads, as in the case of chinchilla, webbing, brake lining, woven cotton conveyor belting, cotton harness webbing, and so on.

POCKETING: Any material used to make pockets, such as drill, jean, unbleached muslin, silesia, chamois cloth, cotton velvet, farmer's satin, etc.

POLISHING CLOTH: A square of napped cotton, 12 x 12 inches or 18 x 18 inches in size. It finds use for polishing and dusting glass, metal, and wood; also used in the automobile and harness trades. Formerly these cloths were made with striped borders woven in on the four sides; today, however, the demand is for printed colored borders and hemming only on two opposite sides. Medium or heavy-weight flannel is most popular, while velveteen is used for silverware polishing.



Broken twill $\frac{2}{2}$

4 right hand
4 left hand

POLYETHYLENE: A synthetic resin adapted to molding and casting purposes and for the extrusion of yarn and staple textile fibers. Its specific gravity of 0.92 indicates a high covering power. The product comes in the form of granules ready for the extrusion process. Coloring matter is contained in the material and, if desired, titanium dioxide may be used as a dulling agent. Polyethylene, normally translucent, may be made opaque by the use of pigments.

PONCHO: 1. A cotton warp and wool filling cloth which has been fulled considerably and given a dense napping. This waterproof fabric is used for camping and army service. 2. An all-cotton garment used in cavalry units. When thus used, the article is slit in the center so that it may be easily slipped over the head to afford protection to the wearer. 3. Overcoatings of various fabrics of these types are used in South America. 4. A garment of rubberized cotton or plastic material.

POROSITY: A term applied to fabrics which have open spaces in the texture to admit air to pass through or to allow the heat of the body to escape. Summer fabrics, known under the heading of air-conditioned cloth, have found much favor with the public since certain chemical processes remove the protruding fibers from the goods, allowing the material to become more or less porous.

PORTER YARN: The two-ply yarn used to weave gunny sacking.

POSITEX: A form of natural rubber latex with reversed charge. The product is deposited on yarns as discrete particles instead of as a continuous film; it is said to be undetectable by eye or hand when applied in ratios of ten to fifteen percent. Positex can be used to prepare felts from non-felting fibers such as the bast fibers; such felts are not waterproof and will maintain their air permeability.

Two grades of the product are made, vulcanized and unvulcanized, each of which is prepared and compounded for certain applications. Both types are ready for immediate use after addition of water and adjustment of pH. The rubber material has a pH ranging from 3 to 11.

The new rubber material can be compounded with many substances such as mothproofing agents, pigments, scents, water repellents, etc. Positex will not impart elasticity to yarn. Product of British Rubber Development Board.

POTTERY DUCK: An evenly woven army-type duck used as filtering fabric in the pottery industry.

(continued)

Industrial Textile Terms . . .

PRINT CLOTH: Carded cotton cloth made with the same yarns as cheesecloth, but with more warp and filling threads to the inch. Most print cloths are made in narrow widths up to 40 inches. Made from single 28s yarns up to single 42s and in a range of finishes, thus producing cambric, muslin, lawn, longcloth, printed percales, etc.

PRESS CLOTH: Filter cloth made of camel's hair, cotton, and wool, depending on use. Hair fiber is found in varying percentages in all press cloths.

PROLON: Term applied to textile fibers made from protein bases. Examples are casein (milk) and zein (corn). Vicara is another protein fiber.

PROTEIN: An albuminous substance obtained from proteids. It was regarded originally as a proteid deprived of its sulphur, but can be, at present, considered as an artificial product that resembles alkali-albumen. The true protein is any of a general class of complex compounds which contain nitrogen, necessary to form living tissues of all animals and plants such as muscle and nerve tissue. Protein contains carbon, hydrogen, oxygen, and nitrogen.

PROTEIN FIBER: Made from soy beans and corn meal, the latter being known as zein. The vegetable matter is crushed and oil is extracted. Saline solution extracts the protein. A viscous solution is made and after chemical treatment passes as extruded filaments through a spinneret into a coagulating bath. Winding and reeling follow to give the commercial product.

PUNCHED FELT RUG: This is made with a burlap base into which first jute is punched, and then wool. Rubber composition is spread on the back in order to lock the fibers and prevent slipping.

PYROXYLIN: A cellulose product which is used to coat cotton or rayon fabrics to make a fabric water-proof, stain-resistant, etc.

PX CLOTH: A special type of pyroxylin-impregnated, washable bookbinding cloth.

QUALITY BINDING: A rugged twill tape made of coarse but strong wool, used for carpet binding.

QUATRE FILS: Strong French sailcloth made of four-ply warp and single filling yarns.

RAG RUG: A hand-loomed, plain weave material made of rag strips. Because of the unevenness of the strips used, these rugs are difficult to produce on power looms. In addition, costs do not warrant their production on a power machine. Cotton warp is used to support the strip filling. Braided strips are stitched together by machine.

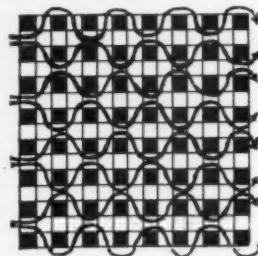
RAILROAD CANVAS: A plain, open-weave, heavily-sized embroidery canvas made of black and white thick cotton yarn.

RAMIE: An important bast fiber also known as Rhea or China grass. Ramie resembles flax but it is coarser, more difficult to manipulate and its uses are limited because the cost of production in making the yarn is high. The fibers are straight and slippery, and from 8 to 12 inches long.

Ramie is often mixed with other fibers, and because of this finds its way into many textile materials. It is a fiber that is undergoing much experimentation since its great strength, luster, good body, and appearance warrant further research. The chief uses of ramie include fishing lines and nets, gas-mantle fabric, cordage, dress-goods and shirtings, upholstery and napery; in general, it has many uses comparable with linen.

RAWHIDE: A basic American term used in English-speaking nations for cattlehide that has been de-haired and limed, often stuffed with oil or grease. It has sometimes undergone other preparatory processes, but has not been tanned. Rawhide is used chiefly for mechanical purposes — belt lacings and pins, loom pickers, gaskets, pinions,

Cross section
plain weave
float of 1



gears; also for trunk binding, luggage, etc. Sometimes rawhide is tanned with the hair left on.

RAYFLEX: High tenacity viscose rayon yarn used in tire cord. Product of American Viscose.

RAYON BANDS OR STRIPS: A rayon product simulating straw, made by extruding the spinning solution through a single rectangular or ribbon-like orifice. It is used for decorative applications.

RAYON FILAMENT YARN: A continuous individual strand of rayon as it comes from one opening of the spinneret. It is given a slight twist, usually 3 to 5 turns per inch.

RAYON MONOFIL: A coarse, round, single filament yarn often referred to as artificial horsehair.

RAYON STAPLE FIBER: Originally referred to the waste from the manufacture of filament rayon. It is now manufactured on a large scale comparable with filament yarn. Filament is cut to staple lengths as it emerges from the spinneret. It is ideal for spinning by the cotton, woolen, worsted, and flax methods. Staple fiber comes in bright and dull effect, and in varying denier sizes.

RAYON YARN: A group of rayon fibers or filaments twisted together to form a continuous strand for use in weaving, knitting, or braiding.

RAYON YARN, DENIER OF: Numerically, this is equal to the weight in grams of 9,000 meters.

RAYONIER: Some of the principal grades of Rayonier wood cellulose are:

Rayaceta: A highly purified wood cellulose especially developed for the production of cellulose acetate fibers. It is also used in the manufacture of acetate films and sheets for packaging purposes.

Rayamo: A wood cellulose developed for the manufacture of cellophane.

Rayocord: A highly purified wood cellulose suitable for the production of viscose yarns of high tensile strength. It is also used in the manufacture of tire cords and for textile yarns where maximum strength is desired. Rayocord can also be used for the production of saturating papers and vulcanized fiber.

Hicolor: Used in the manufacture of viscose fibers and yarns of high quality. It may also serve as base material for vulcanized fiber.

REGENERATED CELLULOSE: A term describing a chemical treatment of cellulose during its manufacture into rayon. This is distinguished from cellulose acetate which reacts differently to dyes and chemicals.

REINFORCED ASBESTOS ROVING: A roving made with a core or support made from fibers other than asbestos.

RENFORCE: French sailcloth made from flax or jute yarn.

RESILIENCE: The capability of a material to work against a restraining force during its return from a crushed or crimped state.

RESIN: Any substance of plastic nature which can be used on a fabric to give the material some resilience. An example would be dissolving cellulose acetate in acetone to be used as a spray on cloth.

RESLYN ADHESIVE: This screen-table adhesive does away with the time-consuming method of nailing or pinning fabrics or silk screens to printing tables in silk screen printing processes. The product holds unprinted cloth to the screen table with sufficient adhesion to prevent slippage of the material during printing. The cloth is easily removed after the printing has been completed, with no adhesive sticking to the printed goods.

REVERSED CALF: Pertains to the heavier weight calf leathers that are finished on the flesh side and contain oils which make them more water-repellent than suede. It is used for shoes when a napped sport leather is desired. In Great Britain the terms *Trench Calf* and *Hunting Calf* are synonymous with Reversed Calf. Allied with the term is *Service Leather* which applies to splits and side leather.

RIBBON LOOM: This type of loom employs a rack to move the shuttles to and fro. The swivels may work in a straight line or in a curved, half-moon direction. The latter method conserves space in the loom and makes it possible to weave more pieces than by the straight swivel method. Depending on the type of the loom and the material to be made, it is possible to weave from 24 to 144 pieces of narrow fabric or ribbon at one time. Fabrics made on this type of loom are: narrow banding, ribbon of all types, piping, edging, banding, webbing, and woven braid.

RING SPINNING: A method of spinning cotton and worsted roving into yarn. The roving, after it has passed between the sets of drawing rollers, is guided in a downward direction through the traveler, a small inverted U-shaped device which is flanged onto its respective ring in the ring rail of the machine. It travels around the ring at the rate of 4,000 to 12,000 revolutions per minute. As the spindle revolves to wind the yarn, the latter has to pass through the traveler and is carried around on the ring at this rapid pace. The narrower the width of the traveler, the finer is the diameter of the yarn and the higher its count.

The up-and-down motion of the ring rail causes the winding of the yarn onto its bobbin at the nose, body, and heel. The spindles are driven by means of cotton friction banding. One endless belt drives two spindles on each side of the frame.

ROAD MEMBRANE: This open, plain weave fabric made of very coarse cotton yarn is used for reinforcement of bituminous surfaced roads, airport runways, and ditch-linings.

ROAN: Originally the term meant sumac-tanned sheepskin as apart from *Basil*, or bark-tanned, sheepskin. Roan now means sheepskins of full substance which are not split.

ROLLER LEATHER: Leather for cots or covers used on the upper rollers of cotton spinning machinery, especially the bark-tanned from certain classes of sheep, lamb, and calf skins.

ROMAN CANVAS: Made of linen, and coated on

one side with paint or tish, it is used by artists in painting with oils.

ROOFING FELT: A felt made from combining coarse hair fibers with wool or asbestos. A thorough impregnation with tar gives the finished product.

ROPE MAKING: In the early days of rope making, during the spinning of yarn for rope, following the hackling process, it was necessary for the operatives to do considerable walking. The walker or spinner had to *back down the walk* and draw out the fibers as they turned on the hooks of a wheel. The spinner often had a course that covered as much as 400 yards; he had to keep his backward pace constant with his forward pace in order to insure even rope. Today, with improved methods, the spinner rides a machine which resembles the well-known hand-car used by railroads. The car shuttles back and forth on tracks. The rope making industry is constantly making improvements to ease the burdens placed on workers.

ROPE TURN: The distance that is parallel to the axis of a rope in which a strand makes a spiral.

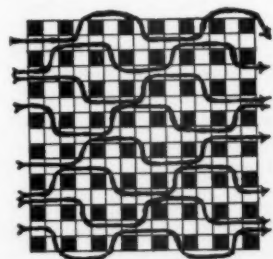
ROVING: The soft rope form of fibers from which yarn is made. It is one step removed from finished yarn. Roving is fed to the spinning frame and comes out in yarn form. It is finer in diameter than slubbing, but greater in diameter than yarn. It is really a condensed sliver and slubbing that has been drawn, drafted, twisted, attenuated, doubled and re-doubled.

RUBBER: A substance obtained from the milky juice, or rubber latex, of tropical plants, usually characterized by its elasticity, though its properties vary widely depending upon its source and preparation. The principal source of crude rubber is plantation rubber from plants cultivated on plantations in the Malay Peninsula, Indonesia, Brazil, and elsewhere. Among other properties, it is resistant to abrasive wear, flexible, extensible, and waterproof. It is commonly combined with yarns and fabrics to make elastic products, rain-coats, balloons, tires, etc.

RUBBER BELT DUCK: Plain weave fabric made of ply yarn not finer than single 8s. The weight is from 22 to 36 ounces, and the width 42 inches. When made of yarns finer than 8s, it is called Special Belt Duck.

RUBBER BLANKET: An endless, four-ply, heavy cotton blanket that is glued with rubber cement. This blanket helps to carry textile goods in the printing machine and serves as an under-support for the material.

RUBBER COATED TEXTILES: To make material waterproof, or for other purposes, a rubber coating may be added to one or both sides of a fabric. Rubber cement is often used on the back of imitation pile and fur fabrics to hold the texture in place. Fabrics treated in this way will not withstand dry cleaning since the cement is soluble, thereby allowing the pile construction to collapse.



Cross section
twill weave
float of 2

RUBBER SHEETING: A plain cotton fabric with heavy coating of cured rubber on one or both sides. Used in various weights in hospitals and for baby cribs.

RUBBER THREAD COUNTS: The number or the size of the thread is based on a cross-section, expressed in the fractional parts of an inch. In cut thread the size number indicates one side of a square representing its cross-sectional area. Thus, a 42 measures 1/42 inch. In round thread, the size number represents the diameter; a 50 is 1/50 inch in diameter. The relationship of cut thread sizes to extruded sizes is that of the area of a square to the area of a circle. Thus, a 42s cut is the same as the 37s extruded.

RUBBERIZED CLOTH: Cotton fabric that has been given waterproof treatment, to be used for some definite purpose such as table covering or sheeting. Only one side of the fabric is coated. The treatment is also applied to silk, rayon, and nylon cloths. The fabric is largely used for rainwear.

RUBBERIZED TIRE CORD FABRIC: Made of 23/5/3 carded cable yarn of plain weave, and given an improved heat-resistant cord treatment. This is used for pneumatic tire casing.

RUSSET SHEEPSKINS: Sheep or lamb skins that have been tanned in cold-leached hemlock bark.

RUSSIAN LEATHER: This trade term first meant a Russian calfskin shoe leather, of vegetable tannage, dressed with birch oil and distinguished by its odor rather than by appearance. In the United States the term describes a fancy stock, usually made of calfskin, sometimes of light cattlehide.

S: A designation for that direction of twist in yarn the inclination of which corresponds to the central portion of the letter S. S-twist is also known as left, reverse, filling, or cross band. Z-twist is also known as right twist, and because the words *left-twist* and *right-twist* lead to confusion, the letters S and Z have been used for simplification.

SACKCLOTH: A coarse, heavy, unbleached muslin used to make sturdy sports apparel.

SADDLE BLANKET: Made of coarse wool, it is a blanket placed under the saddle to prevent friction, chafing, and galling.

SADDLE LEATHER: See Harness Leather.

SAIL DUCK: See Ducks, Sail.

SAILCLOTH: 1. Canvas that is particularly strong, durable and able to withstand the elements. Linen, cotton, nylon, and combed-yarn duck are used to make the fabric. One very popular type is of the order of balloon and typewriter fabrics and is used for spinnaker and head sails. Finished at 40 inches, the texture is around 184-square and there are about 6 yards to the pound. 2. Boatsail drill that is made of Egyptian cotton yarn in plain weave construction. The texture is about 148 x 60 and the cloth has high strength and good wind resistance.

SALEMBAREE: Heavy, plain woven cotton used for tents in northern India. Also known as Kathee.

SANFORIZED: A checked measure of shrinkage. The trademark is applied to fabrics that have been shrunk by the compressive shrinkage process and indicates that the residual shrinkage of the fabric is less than 1% and that the tests have been made by the trademark owner to insure that the shrinkage conforms to the 1% standard.

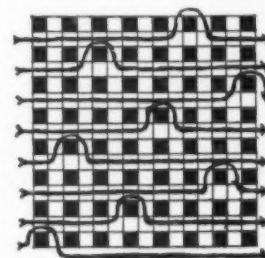
The trademark owners, Cluett, Peabody and Co., Inc., permit the use of the Sanforized label on compressive pre-shrunk fabrics wherever the following conditions have been met: 1. The residual shrinkage in the fabric, that is, the amount of shrinkage left after shrinking, does not exceed 1% by the U.S. test method, CCC-T-191a. 2. Tests

to determine residual shrinkage have been checked and approved by the trademark owner.

SANTICIZER 141: A vinyl plasticizer of low volatility and capable of imparting good low-temperature flexibility, excellent solvent resistance and flame retardance. It is free from systemic toxicity and is non-irritating. Uses for this product of Monsanto Chemical Company include coated textiles, free film, handbags, shoe soles, shower curtains, belts, baby pants, hospital sheeting, and food bowl covers.

SAPLIER: Coarse cotton, jute, or comparable yarns woven into fabric to be used for packing purposes.

SAPONIFICATION: Chemically, this process, used primarily for soapmaking, is the hydrolysis of a fat by alkali with the formation of a soap, or salt of a fatty acid, and glycerol. It implies, also, the hydrolysis of a fat by any method. The process



Cross section
satin weave
float of 7

is also used in the changing of acetate rayon into a regenerated type.

SARAN AND VELON: Chemicals are the base of these fibers; after processing, the result is vinylidene chloride. Derived from ethylene, a petroleum product, and chlorine from brine.

Saran is known in popular language as a thermoplastic resin; that is, a plastic which is softened by heat and hardened into shape by cooling. It can be quickly and economically molded, and because it can be softened and reshaped again and again, little waste is occasioned. Saran is made by Dow Chemical Co., and is made into filaments and fabrics both under its own name and others.

Velon is a filament made by the Firestone Tire and Rubber Company. At present it is available only as a monofilament.

Properties of these two fibers include resistance to chemicals, stains, abrasion, corrosion and moisture; they are nonflammable, tough, flexible as desired. Chief uses are for screen cloth, draperies, luggage, shoes, upholstery.

SARELON: A new fiber which is made from peanut protein. It is light cream in color, and has a soft, pleasant feel suggesting the natural protein fibers, silk and wool. Sarelon is comparable with wool in heat-insulating and moisture-absorbing properties. It does not shrink to any appreciable amount in hot water. The fiber has an affinity for dyes used on silk and wool. Wet strength is low.

The raw material is protein obtained from solvent-extracted peanut meal; all skins must be removed since there would otherwise be the tendency of objectionable color in the fiber when produced. Sarelon is made by a wet-process like that used for rayon, but is more complicated.

SATEEN: This cloth is made with a 5-end or an 8-shaft satin weave in warp-face or filling-face effects. Filling-face sateen requires a great many more picks than ends per inch in the goods while the reverse is true in the warp-face material. Carded or combed yarns are used in sateen, and cloth of the former comes in heavy weights that it may serve as work clothing, for use in the apparel trades, etc. Combed yarn sateens are usually mercerized and have a very smooth, lustrous

(continued)

Industrial Textile Terms . . .

surface effect. These are used chiefly for linings.

SATEEN TICKING: Used chiefly for upholstery purposes, it is made from a 5-end or an 8-end satin weave. This compact, rugged cloth has a texture of 98 x 56 while the counts of yarn are 7s or 8s combed warp, and 14s or 16s filling. The warp-effect satin weave used adds to the appearance of the goods which may or may not be striped.

SATEEN, WIDE INDUSTRIAL: Satin weave material finished at 54 inches, with a texture of about 96 x 64; approximates about 1¼ yards to the pound. Carded yarn is used in the cloth which is often coated.

SATIN DRILL: The cloth is made with a 5-shaft, warp-effect satin weave. Many qualities are manufactured and shipped to all markets. The yarns are usually 16s to 24s warp and filling. Finished white, khaki, and blue for suiting, etc. Standard cloths are:

WIDTH	TEXTURE	WARP	FILLING
29 inches	104 x 58	16s	11s
28½ inches	100 x 52	22s	28s
28½ inches	104 x 68	22s	20s
29 inches	128 x 88	32s	26s

WIDTH	BOLT	WEIGHT	MARKET
29 inches	100 yards	45 lb.	Argentine
28½ inches	120 yards	27½ lb.	Egyptian
28½ inches	120 yards	36 lb.	Indian
29 inches	120 yards	33½ lb.	Colonial

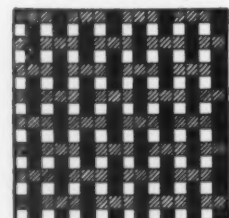
SATIN FINISH LEATHER: A dull or mat finish on leather as opposed to a glazed finish.

SATIN SHEETING: 1. A strong, twilled cotton and silk or cotton and rayon fabric which has a satin finish. Finds much use in casement cloth, embroidery, and upholstery. 2. A fabric made of waste silk or rayon face with a cotton backing; this English fabric finds use in dressgoods. 3. A contradictory term sometimes used in the grey goods sheeting trade.

SCRIM: 1. An open mesh plain weave cotton cloth made from carded or combed yarns in several constructions and weights for use as bunting, buckram, curtains, etc. 2. Cheesecloth, when bleached and firmly sized, is known as Scrim. 3. A lightweight cotton sheer cloth made in doup or in plain weave with single ply yarns. It is often made with colored checks or stripes for curtains.

SELVAGE: The woven edges of a cloth that run parallel with the warp.

SELVAGE, TAPE: Tape selvage is a definite weave such as 1 end over 2 picks or a 2-and-2 basket construction. Edges of this type are used in high pick cloths because they are strong and hold better than other possible constructions. There are some fabrics made today in which only a tape selvage



1 plain weave
I

can be used; a plain weave selvage would be too tight and spoil the appearance of the goods. Selvages of this type are seen in marquisette, sateen, twill cloths, organdy, voile, etc.

SEWING COTTONS: Cabled cotton yarns usually of 6, 9, or 12 threads. Two or three singles are twisted together in the same direction as in the single yarn. Two or three of these twisted yarns are then given twist in the opposite direction. Sewing cottons are gassed and then glazed or polished according to their particular future use.

SHADE CLOTH: A plain weave fabric that is white, canary, ecru, or green in color, used for shades on windows. Cloth is smooth, firm, rugged, and rather lustrous in finish. Has good body and feel and the required stiffness is provided by a mixture of oil, sizes, and starches. Material is not transparent and withstands rough usage.

SHANK: The portion of a hide that covers the leg of the animal.

SHEENTEC: Trade name for flat, ribbon-shaped, single acetate rayon filaments, or for acetate yarns composed of a plurality of such filaments in a yarn. Product of Tennessee Eastman Corporation.

SHEET WADDING: Cotton wadding or stuffing pressed into sheet form for use in tailored garments for shoulder padding, muff linings, and quilted robes of several types.

SHELTER TENT DUCK: See Duck.

SHOE CLOTH: Worsted fabric made on corkscrew weaves and used for spat material and shoe cloth. The weight of the material is from 12 to 18 ounces per yard and a feature is the high, compact texture — from 80 to 140 each way. Two-ply worsted yarn is used in the warp; filling is wool, worsted, or cotton and is usually single-ply.

Gabardine and other high texture twill fabrics are used for women's shoes; canvas, duck, and similar materials are used for men's shoes.

SHOE DUCK: See Ducks, Shoe.

SHOE LEATHER: A self-explanatory term which embraces a large variety of leathers. 1. Sole leather is made from cattlehides and buffalo hides. It covers the superior grades that are used for the outer soles and the lighter grades and offal (head, shoulders, and bellies) that are used to some extent for heels, insoles, toecaps, counters, etc. 2. Upper leather comes chiefly from calfskins, goat-skins, cattlehides, horsehides, and other groups of animal skins, for shoe uppers. 3. Miscellaneous shoe leathers include facing stock, lining stock, tongue stock, and welting.

SHOE TOP SILK: Heavy silk cloth that has a rather elaborate figured design; twill or satin weaves are used. The warp is of expensive, fancy, or novelty yarn and the filling is usually cotton. The fabric is substantial, rough, and uneven in feel; gives good wear because of the manner of construction. It is used in footwear, chiefly for evening shoes.

SHOT: The number of filling picks or weft picks per row of tufts in pile fabric floor covering.

SHOT YARN: The single filling used to weave gunny sacking.

SHOULDER HIDE: That part of a hide between the neck and a line cut across the hide from the center of the front flanks, about 50 inches from the butt of the tail of cattlehides.

SIDE: One-half of a cowhide after cutting down the backbone of the pelt with the head, belly, and shoulder attached.

SIDE, SIDE-UPPER LEATHER: A type of shoe upper leather that consists of the grain or hair side of cattlehides finished in a variety of grains or colors. The name originated from the practice of slitting a hide along the backbone into two halves or sides.

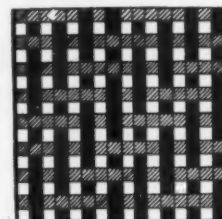
SIDE LEATHER: Half of a hide, cut longitudinally along the backbone, with the offal (head, belly and shoulder) attached.

SIDPAT: Indian sailcloth.

SIGN CLOTH: Cheesecloth, medium count printcloth or bleached sheeting serves as the basis for painting signs that are not to be permanent. The fabric to be used must be heavily filled with starch

and China clay. Improved qualities of sign fabric are now pyroxylin treated.

SILENCE CLOTH: 1. Used as a padding material to be placed under the tablecloth on the dining table; lessens the noise of dishes and protects the table finish. A rather thick material and given consider-



2 right
2

hand twill

able napping so that it will best serve its purpose, silence cloth is known also as molleton. 2. A type of monk's cloth used as drapery or wall fabric in broadcasting studios to deaden sound.

SILVALIN: Yarn made from cellulose matter — bamboo, cellulose pulp, cotton, jute, linen, wood, or any other vegetable waste. The yarn is made on the Kron patented method which originated in Germany. Paper yarn made in England is also called Silvalin.

SINGLE FILLING FLAT DUCK: See Ducks, Flat.

SINGLE WOVEN FABRIC: Cloth made with two sets of threads; one set, the threads which run vertically in the goods, is known as the warp; the other set, the threads which run horizontally in the material, is known as the filling. The terms ends and warp are considered synonymous; picks and filling are likewise synonymous.

Selvage, selvedge or listing, the characteristic edge of the goods, runs in the warp direction.

SIX-CORD THREAD: Cabled sewing cotton made by plying two single yarns and then twisting three of these to make the finished thread. The twist used may be S-S-Z or Z-Z-S.

SKIN: The pelt from smaller animals such as the sheep, calf, or goat. The term, when applied to finished leather, means the entire skin.

SKIRTING LEATHER: This signifies a special type of cattlehide used for the skirts or hanging portions of saddles that come between the legs of a rider and horse.

SKIVER: This designates the grain-split of a sheepskin and is used for many purposes, such as sweat banding for hats, bag lining, bookbinding, pocket-books, and fancy leather articles.

SLEEVING: Woven, knitted, or braided fabrics made in circular or tubular form less than 4" in diameter (circumference is under 8 inches).

SLICKER FABRIC: A common name applied to textile fabrics which have been chemically waterproofed by the coating method, which is a continuous waterproof film applied to the fabric. The usual basic fabrics are cottons, rayons, and silks. A vast number of chemical substances are applicable, but only a few meet the requirements of the rigid specifications necessary to produce satisfactory finished fabrics. Base fabrics plus chemical substances plus application of the various proofing agents properly applied produce the required finish for good waterproofs.

SLIT CELLULOSE FILM: Narrow cellulose film sheets which may be used as yarn, alone or in combination with other yarns, to give novel effects in woven or knitted fabrics.

SLIVER: A continuous strand of loosely assembled fibers that is rather uniform in a cross-sectional area, and without twist.

SLIVER LAP MACHINE: The purpose and function of this machine is to convert the card sliver into a lap form about ten inches wide. Twenty card slivers of cotton are fed into this frame; they enter the back rollers as one. The action of the drawing rollers reduces the stock to the correct weight at the delivery end of the machine, and into the sheet form that is then fed to the ribbon lapper.

SNUFFED FINISH: Leather which has had the top or hair follicles removed by an emery wheel. Sometimes known as Corrected Grain.

SOFT-FILLED SHEETING: Made with soft-spun filling that is usually much lower in yarn count than the warp yarn in the goods. It is much used for converting into various types of napped fabrics such as flannels, suede-finish cloth, and duvetyne.

SOLE LEATHER: See Shoe Leather.

SOLKA: Manufactured from spruce wood pulp by the viscose process, it is a product similar to cotton, but contains more cellulose and has a much shorter fiber. Solka is spun into coarse yarns which are used for upholstery and drapery fabrics and for rugs, shoes, and handbags.

SOYBEAN FIBER: The protein base fiber produced from the soybean. It resembles wool in resiliency and feel; it is insulative, and has a tensile strength about 80 percent that of wool. It excels wool in resistance to alkalis.

The soybeans are crushed into a meal, which is treated with a saline solution to extract the protein. This extract is subsequently changed into a viscous solution, which is spun into fiber by methods similar to those used to produce other fibers. The fibers are in a fluffy mass and resemble scoured wool.

Some of the potential uses of soybean fiber include blending with wool to give a soft quality to upholstery, suitings, and felt.

SPANISH GRAIN: A finish made by embossing on fancy or upholstery leather a modified natural grain which formerly was obtained by drawing a hide or skin in a strong tan liquor to shrink the grain. The result of this action was an interesting pattern on the surface due to the unequal shrinking of the various portions.

SPINNERET: A cap or jet with fine holes through which spinning solution is forced.

SPINNING: Listed chronologically, the four types of spinning are: flyer, mule, cap, and ring. These are all common to the woolen and worsted industry. Most cottons at the present time are spun on either the mule or the ring frame. In this country practically all cotton yarn is spun on the ring frame; in Europe mule spinning is still common.

The earliest spinning frame employed the flyer spindle, which resembles the flyer of the present-day roving frame. The yarn was drawn from the front delivery roll down to the top of the flyer; it was then twisted around the flyer leg, through an eye, to the bobbin. As these frames ran at a low speed (up to 3,000 r.p.m.) the yarn that was produced was quite smooth and free of beard. The difficulties with this method were the low production and strain on the yarn by the bobbin drag.

Mule spinning allows the use of the free spindle and thereby offers a means of increasing production. The process is not continuous, since there are three distinct stages of operation, namely: drafting and delivering, twisting and drawing, and, finally, winding on. The system allows spinning yarns of extreme fineness, and low twists.

Cap spinning is a continuous process. In place of the flyer, a cap or bonnet is substituted. The bobbin, in cap spinning, is driven by a spindle-banding; the bobbin rises and falls within the inverted cap. The yarn comes from the delivery

roll and drags over the lower edge of the cap. Here the bobbin may revolve up to 7,000 r.p.m. Since the bobbin is driven, there is only slight tension in the yarn at any time. Because of the higher spindle speed, the yarn may be a bit fuzzy. Much worsted yarn is spun on this type of frame.

Ring spinning is the most recent development and offers the best possibilities in production. Spindle speeds are high and the process is continuous. The use of the ring and the traveler subjects the yarn to some strain and also reduces the extensibility of the yarn to some degree, but this is not a serious factor. The bulk of yarn is spun on this system, since it allows the use of large packages and increased production.

With regard to spinning of rayon, spinning includes the extrusion of viscose through a spinneret into the coagulating bath, and the gathering and winding of the filaments into bobbin or cake form. Since this process is actually not spinning, and is wholly different from the process of spinning cotton, linen, or wool, the term is a misnomer.

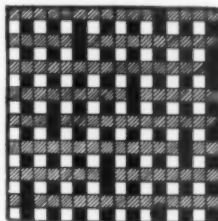
SPINNING FRAME: A machine for drawing out cotton or other fibers to their final spun size, twisting them to impart strength, and winding the yarn onto bobbins.

SPINNING TAPE: Narrow cotton banding made into an endless belt so that it can drive the spindles on ring spinning frames. Usually one band will drive four spindles, two on each side of the frame. Made of small twill weave, the tape ranges from one-half to three-quarters inch in width.

SPLIT: That portion of a hide or skin that has been split into two or more thicknesses, other than the grain or hair-side. See Traveling Bag, Suitcase and Strap Leather; also Upholstery Leather.

SPOOL COTTON: Sewing thread of all types put up and sold on small wooden spools. From 50 to 100 or more yards are wound on the ordinary spools.

8-end satin
weave, base of
3, filling
float of 7



SPUN DYED FIBRO: This term is used to describe Fibro rayon staple spun with pigments injected into the spinning solution in order to produce a fiber with the color built in. It is made by Courtaulds, Ltd., and, at present, is supplied in a range of fourteen colors.

SQUARE CLOTH: A term used for any cloth having the same number of ends as picks per inch, and warp counts the same as the filling — 80 x 80, 64 x 64.

STAFF: Heavy fabric made for use in buildings and temporary structures. It is made from New Zealand flax mixed with plaster and formed into flat sheets.

STAFFORD CLOTH: Heavy cotton fabric used for curtains and hangings, it comes in plain or rep weaves. Mercerized and dyed cotton yarns are used in the textures which come in many qualities, such as 56-inch, 80 x 68, 2/60s warp and 2/24s filling, plain weave. Another popular construction is 56-inch, 106 x 58, 2/60s warp and 2/30s filling.

STANDARD ATMOSPHERE: The air that is maintained at a relative humidity of 65 percent and at 70° F. (21° Centigrade).

STANDARD CONDITION: The condition attained by a sample when it reaches temperature and moisture equilibrium with the standard atmosphere

after transfer from a lower relative humidity. See Standard Moisture Regain.

STANDARD MOISTURE REGAIN: The moisture regain of a textile fabric when brought from a lower moisture regain into equilibrium with the standard atmosphere. Applied to a fiber, it is the range of moisture regain values through which the standard moisture regain of the individual samples of the same fiber will vary, depending upon their prior history and physical condition.

STAPLE COTTON: At times a misunderstood term, it refers to the long, good, staple stock in speaking of cotton from the first-time ginning. It is the choice fiber ready for manipulation. The term also implies the average length of the bulk of fibers being examined or classed. A stock, sliver, roving, or yarn may have a staple length of 1 1/4 inches. The fibers taken collectively measure to that length. Long staple cotton measures 1 1/8 inches and longer. Short staple cotton is less.

STAPLE FIBER: Filaments which have been cut to the length of various natural fibers. The fibers may be spun on the cotton, wool, worsted, flax, or silk systems and are very popular in dressgoods. The yarn is often mixed with other major textile fibers in varying amounts to bring about new yarn and cloth effects. Examples of staple fiber include acetate, rayon, dynel, nylon, Orlon, Dacron, Vicara, etc.

STARCHING, SIZING: A generic term for compounds which, when applied to yarn or fabric, form a more or less continuous film or solid around the yarn and the individual fibers.

STATIC ELECTRICITY: The force which causes the attraction of small bits or particles to an object after the object has been rubbed or exposed to abrasion. Static electricity in textiles, unless checked or controlled, can reduce production, impair the yarn or fabric quality, increase waste, and cause hazards to personnel.

STOCK: A broad, general term used in mill parlance with reference to raw materials, fibers in process of manipulation, and qualities or conditions of textiles in their various phases. The term is often applied to the following: raw or bulk fibers, lap, sliver, slubbing, roving, top, shoddy and other waste materials, mixes, mixtures, grades of fibers, staple and so on.

STRAP LEATHER: See Traveling Bag, Suitcase and Strap Leather.

STRAW TICKING: A 2-up and 1-down twill weave makes this cotton cloth that is used for ticking.

STRENGTH: Generic term for that characteristic of a material by virtue of which it can resist strain or rupture by external forces.

STRETCH SPINNING: A term used in the manufacture of rayon or acetate. The filaments are stretched while moist and before final coagulation decreases their diameter.

STRONG ACETATE: Acetate yarns which have a high tensile strength may be obtained by a special stretch spinning method. The yarn may be spun as fine as 10-denier; if desired, it can be saponified to give dyeing properties of viscose yarn. The staple fiber may be straight or crimped. Tensile strengths and elongations follow: 1. Tensile strength, dry: 6.8 grams per denier. 2. Tensile strength, wet: 5.6 grams per denier. 3. Elongation: 7 percent.

STYLON: Sometimes referred to as *fiber-dust*, the product may be applied to an adhesive-treated fabric under air-pressure, following a definite and previously arranged motif or design. Stylon is suitable for dress fabrics.

(continued on page 140)

IDENTIFICATION OF TEXTILE FIBERS

There are many ways of identifying fibers. The circumstances decide which one is best. It depends both on the facilities available and on the requirements. Where the most primitive means only are available, *e.g.*, fire, water, and the five senses, analysis is limited to observations of appearance, handle, strength, odor, and the results of applying heat and water. Even though limited in this way, many identifications can be made though they cannot be confirmed. The chief difficulty arises when mixed fibers have to be analyzed by these simple means since one fiber can mask another. It is also important that all finishes be removed.

Burning tests. Simple tests may be selected for use when speed is the main consideration even though the results reached are somewhat uncertain. The chart opposite gives a detailed description of the burning test which, with experience in handling fibers, will give a general idea of the kind of material present. In any formal analysis this should be treated as the preliminary examination and two kinds of confirmatory tests should be applied. First a test or tests should be made to find if the sample is composed of fibers of the same variety or of a mixture of fibers. If it is of a single variety then confirmation and closer identification should follow, but if it is a mixture then a systematic examination is recommended.

Use of the microscope. Microscopic examination is the best general indication of mixtures and of the individual fibers present. Because of this most workers observe the fibers under a microscope immediately after a preliminary examination. If no microscope is available, a density gradient tube is an alternative means of checking the preliminary examination and frequently indicates if the sample is a mixture. Other tests can be used to confirm the preliminary ones, but none gives such a wide range of results on different fibers as the microscope. It is well to emphasize that these tests are intended to confirm and not to substitute the preliminary ones which should always be made.

Chemical tests. To provide a basis for analysis when a microscope is not available, a scheme based on chemical reagents is given. This will be found of great value in the final stages of an identification, but is not intended for use in the early stages while the constituents of the sample are totally unknown. Used carefully, this scheme gives satisfactory results on samples composed of fibers of one variety as opposed to mixtures.

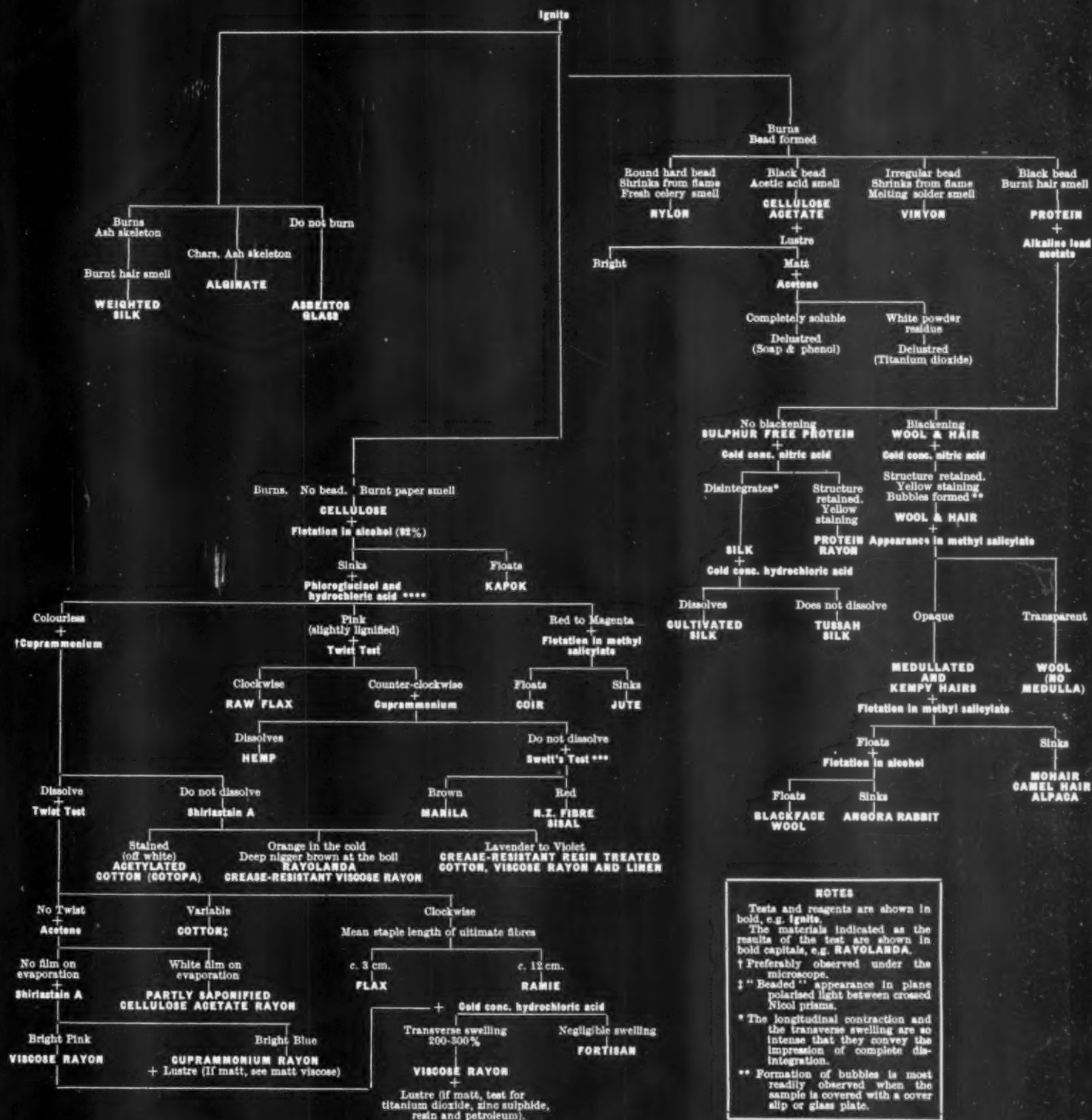
Testing mixtures. The burning and chemical tests are unsatisfactory for intimate mixtures of fibers, for which undoubtedly the best method is microscopic examination. Where the highest precision is required the microscope must be used, and even when the requirements are less stringent a microscope will be used by any experienced worker.

In a properly equipped laboratory a microscopic examination will follow immediately after the burning test, chemical tests being observed under the microscope. At the same time those who possess a density gradient tube will drop a small sample of the fibers into it and leave the fibers to reach their equilibrium position while making microscopic and other tests.

Guidance in the interpretation of the microscopic observations is provided by the illustrations of fibers which show the appearance of cross-sections and entire fibers which have been carefully selected to illustrate typical examples. It must, however, be emphasized that they are not a substitute for experience in the microscopic examination of known fibers. Other samples of similar fibers and other methods of mounting and illumination give images which differ from those shown here.

The observer should make and keep a collection of fibers of known origin with which the fibers to be identified may be compared. Also it is advisable to become quite familiar with the reactions of a few reagents rather than work through a very large number each time a fiber is to be identified.

PRELIMINARY ANALYSIS WITHOUT USING THE MICROSCOPE



The material on the foregoing pages is by courtesy of The Textile Institute, Manchester, England.

Industrial Textile Terms . . .

SUEDE FINISH: Obtained by running the surface of leather on a carborundum or emery wheel to separate the fibers in order to give a nap to the leather. The grain may be suede-finished, but the process is more often applied to the flesh side of the skin. This finish is usually applied to chrome or alum-tanned leather, while the ooze-finish is popular on vegetable-tanned leather.

SURGICAL GAUZE: Cheesecloth that has been sterilized after bleaching.

SYNGLOW: A very fine web-like product made of fiberglass and encased in a hard but pliable and almost transparent plastic. The very smooth type goes under the name of Synskyn. Both may be easily cleaned with soap and water, are mildew-resistant and flameproof. Have been developed from research conducted on radar panels.

SYNSPUN: A fiberglass fabric in which the fibers are matted loosely and set with plastic. Used in modern paneled screens, the product is washable and fire-resistant.

SYNTHETIC RESIN: Complex resinous material prepared from simple organic compounds.

SYNTHETIC RUBBER: Synthesis of natural latex from derivatives of petroleum.

SYNTHON: Suggested as a generic term for fibers made from organic substances which in turn have been synthesized from simple raw materials; nylon and Vinyon are examples.

TABLE PADDING: Soft cotton fabric napped on both sides or quilted. Known also as silence cloth, it is used to protect tables, ironing boards, etc. from pressure and heat.

TACKLE TWILL: A trademarked fabric, made by William Skinner & Sons. This strong, snag-proof twill weave has a rayon face and cotton back construction made to maintain the desired color brilliancy on the athletic field.

Features of this popular fabric include deep, rich luster, water-repellency, vat-dyed fast colors, dry cleanability; washable if handled properly; not susceptible to moths and mildew if dried thoroughly before storing. Fabric weight is about 8½ ounces per square yard. Uses include football pants, softball uniforms, hockey pants, warm-up clothing, basketball uniforms, fishing garments, rainwear, golf jackets, sports jackets, and other athletic and spectator sportswear. Comes in all colors and shades.

TAG CLOTH: Same as Label Cloth.

TAPE: Narrow loom fabric of twill or broken twill construction. Up to 144 pieces may be turned out at once by a single narrow fabric loom. There are many types of tape, such as banding for the apparel trades, binding, and belting.

TARLATAN, TARLETAN: Originated in Italy where it was made of linen and cotton, the cloth was coarse and low in texture. Today, tarlatan is made of either carded or combed cotton yarn, and is a thick or thin scrim, heavily starched and net-like in appearance. It is used for fruit packing, dresses, coat linings, and in the sewing and millinery trades because of the heavily sized finish which makes it ideal for waist banding and hat lining. Tarlatan comes in white and in colors. When flame-proofed, it is used for theatrical gauze and stage draping.

TARPAULIN: 1. Canvas or nylon fabric usually coated to make it waterproof so that it may serve as a protection against inclement weather. Finds great use in covering athletic diamonds and fields. 2. A sailor's storm hat can be called a tarpaulin.

TEARING STRENGTH: Implies the force needed to begin or to continue a tear in a cloth under specified conditions.

TECAFIL: An Eastman trademark for a true spun yarn made up of fibers of various lengths rather than customary uniform lengths. It is made directly from tow or strand of continuous filament, using a modification of the patented Perlok System of continuously breaking and drafting the parallel filaments to form a roving which is then drafted and twisted into a yarn.

TEMPRA: Trade name for high tenacity type of viscose yarn made by American Enka Corporation.

TENACELL: Made from wood cellulose by controlled chemical procedure, this product is high in purity and uniformity. Converted into a perfect viscose spinning solution with a minimum use of other chemicals, Tenacell is used in the manufacture of high tensile strength yarn such as tire yarn. Product of Riordon Corp., Montreal.

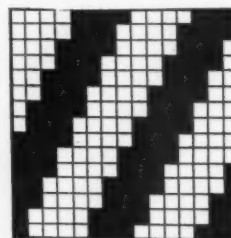
TENACITY: The breaking strength of a fiber, filament, yarn, cord, etc., expressed in force per unit yarn number.

TENASCO: High tenacity viscose yarn manufactured by Courtaulds, Ltd.

TENITE: Important characteristics of Tenite are its extreme toughness, resilience, lightness of weight, weather-resistance, dimensional stability, natural luster, pleasant feel, and unlimited selection of colors in crystal, transparent, translucent, opaque, and variegated forms. Thermoplastic, it is injection-molded at the fastest speeds possible with plastics, and is well suited to continuous extrusion without the use of solvents.

A variety of Tenite formulas, permitting adaptation of Tenite to different use requirements,

63° twill $\frac{7}{8}$
go up 2 picks
on each warp end



exists in Tenite I (cellulose acetate plastics) and Tenite II (cellulose butyrate plastics). Typical applications of Tenite are steering wheels, business machine keys, drill housings, football helmets, oil pipe, irrigation tubes, fishnet floats, toys, tool handles, and telephones. Tenite is marketed by Eastman Chemical Products, Inc.

TENSILE STRENGTH: The breaking strength of a material stated in the force per unit of the cross-sectional area of the original sample.

TENSYLON: A product of the Tensylon Corporation, this is the name for a *tensilized* rubber hydrochloride yarn-like product. The raw material, Pliofilm, is cut into strips, tensilized or stretched, rolled on itself or wrapped around other material, and bonded.

The properties of tensylon are good tensile strength, eight to thirty percent elasticity, high flexibility, imperviousness to water, weak acid, alkali, oil, perspiration, mold, moths, and grease. Fabrics can be cleaned with a damp cloth. Textile uses include braids, woven drapery and upholstery fabrics, bags, shoes, table covers, ribbons, sewing thread, and suspenders.

TENT DUCK: Made of laid warp and double filling, it belongs to the so-called Flat Duck group of fabrics. It is superior to single filling duck. Tent duck filling may be of one-, two-, or three-ply, and the laid warp has two ends which weave as one to add strength. The filling is woven with one pick in each shedding action of the loom.

This term, when finished duck is implied, covers

fabric used for awnings, coverings, tents, etc. Finished width ranges from 20 to 72 inches with the fabric weight varying accordingly. Warp yarn is about 14s in count and the filling is a 2/12s or a 2/13s. Highest textures are in the neighborhood of 80 x 30.

TENT FABRIC: Canvas, duck, or similar fabric waterproofed to make it suitable for shelter tents and coverings.

TERRY: Cotton fabric covered with loops on one or both sides, made by using two sets of warp threads and one set of filling threads. During the weaving process, one set of warp threads is held tight, the other left loose to form the loops. It is used primarily for bath towels, beach robes, and currently for many sportswear purposes.

TERRY TOWELING, TYPES OF:

1. Those classified according to weave or design are:

- Cam-Woven Plain Terry Towel:* Plain border.
- Dobby-Woven:* Simple woven patterns in the border, or all over. Border designs include rope and corduroy borders.
- Jacquard-Woven:* Those which have elaborate allover patterns or motifs.
- Mitcheline Border:* A heavy, distinct, raised or embossed border design, formed by a stout colored filling yarn; roving is sometimes used instead of yarn to obtain the effect. Some of the cloth is made on Jacquard looms.
- Texture-Designed:* Made on either a dobby or a Jacquard loom, they have an allover raised and recessed design. The athletic-rib towel which has raised terry stripes with alternating plain ground stripes is in this classification; also called corduroy toweling.

2. Those classified according to type:

- All-White Plain:* Plain border, white or colors. Also implies fancy-woven colored border toweling.
- Pastel-Color Plain:* Made with dyed filling yarns; white pile yarns.
- Jacquard Reversible Allover:* Colored pile on one side with white pile effect on the other; plain or fancy borders. The interchanging white and colored loops form a contrasting design on each side.
- Bath Mat:* A heavy type of terry made for bath mats. Coarse ply yarns are used to provide bulk, strength, and weight necessary to give the fabric body and substance.

TERYLENE: The term is coined from the words terephthalate and polyethylene, synthetic substances. Somewhat resembling nylon, terylene can be stretched five times its original length without losing firmness. Made in various thicknesses and widths, it can withstand bright light, and will launder and press without any special precautions. Terylene is not affected by moisture, chemical mixtures, or micro-organisms. The product is still in early stages of development.

TEXTILES: Term used to denote the materials and manipulation from raw condition to the finished state of any of the fibers. There are three great fields in the textile industry from the standpoint of the types of goods manufactured: apparel, decorative fabrics, industrial fabrics. Rugs and carpets, wall coverings, conveyor belting, duck and canvas, webbing and ribbon are all textiles. The term includes all materials from the very lowest in cost and the cheapest in construction to the expensive damasks, brocades.

TEXTILE CLASSIFICATIONS:

- a. **Raw material:** Wool, cotton, rayon, asbestos, fiberglass, nylon, etc.
- b. **Construction:** Woven, knitted, braided or plaited, felt, etc.
- c. **Color:** Red, blue, grey, brown, natural, neutral, pastel shades, etc.
- d. **Finish:** Boardy, cashmere, ciré, clear, crepe, crisp, cropped, de-lustered, dull, duplex, even, face-finish, glazed, glossy, harsh, lustrous, mercerized, moiré or water-marked, moss, napped, natural, pebble, plain, reversible, rough, satiny, semi-finish, sheared, smooth, soft, starched, stiff, surface-finish, undressed finish, uneven finish, etc.

TEXTURE: The surface effect of cloth as dull, lustrous, woolly, stiff, soft, fine, coarse, open, or closely woven, etc. Also refers to *hand* and *feel*.

THEATRICAL GAUZE: Thin, open curtain fabric in plain or leno weave stiffened with sizing. Inexpensive and available in many colors. Originally used as background for stage scenery, it is now often used for window curtains because of its transparency and interesting texture.

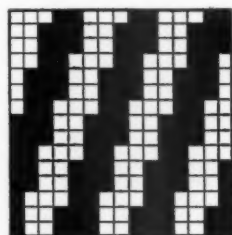
THERMOPLASTIC: Plastic material which is permanently fusible and soluble.

THERMOPLASTIC RESIN: A synthetic resin which can undergo a number of heating cycles and still remain soluble and fusible. This type of resin usually softens with heat and stiffens when chilled.

THREAD: 1. Slender strand or strands of a specialized type of yarn used for some particular purpose such as basting, sewing, darning, embroidery work, etc. Thread is the result of careful drawing and winding of the fibers that make up the product which has to be wound onto some form for handling, such as cop, cone, bobbin, cheese, spool, etc. Thread is made from yarn, but yarn is not made from thread. 2. Any fine cord made from one of the major textile fibers. 3. A cord made of two or more yarns twisted or plied and then finished for a definite purpose.

THREAD COUNT: 1. The actual number of warp ends and filling picks per inch in a woven cloth. Texture is another name for this term. 2. In knitted fabric, thread count implies the number of wales or ribs, and the courses per inch.

THREE-CORD THREAD: The plying of three single cotton yarns into one yarn. Twist inserted is al-



70° twill $\frac{8}{7}$
go up 3 picks
on each warp end

ways in the same direction as the spinning frame twist — S-S or Z-Z.

THREE-LEAF TWILL CLOTH: Cotton cloth of the jean and drill types, but lighter in weight. It is said to be the only three-harness, end, or leaf filling-face twill made, using the 1-up and 2-down twill weave. The yarns used range from those of the print cloth type to combed yarns. The fabric is about 39 inches wide, and texture is about 68 x 76; there are about 4 yards of cloth to the pound. Ticking is used for lining, pocketing, shirting, and certain types of umbrella fabric. The latter material is always made of combed yarn and has a

texture approximating 88 x 112, with about 7.4 yards to the pound.

TICKING: Made in small twill constructions, ticking belongs in the loom-finished group of cloths: chambray, duck, canvas, denim, webbing, etc. Boiling-off or wet-finishing treatment are not applied to the material. Ticking may be recognized by its alternate stripes of white and colored yarns. A typical ticking construction would be 64 ends of 12s warp and 50 picks of 14s filling. Uses include furniture covering, lining harness, mattress coverings, and base for rubberized materials.

TINSEL: Known also as lamé or metallic thread, tinsel has been made since the Middle Ages by the people of Europe. The thread is made of fine wire, usually copper, twisted with cotton or silk threads for the final effect. The yarn is used to bring out scintillating effects in curtains, decorative fabrics, evening wear, millinery, stage costume materials, tapestry, trimming and tunics. One form of tinsel is used to decorate Christmas trees.

TIOLAN: A German fiber in which milk casein has been mixed with latex and glue.

TIRE CORD: Rugged cabled yarn of cotton or rayon used in the manufacture of rubber-tread tires.

TIRE CORD FABRIC: Mechanical fabric made of hawser cord yarn in the warp and single yarn in the filling, interspersed in order to keep the warp together. Used in the manufacture of rubber tires.

TITANOX: This includes: Titanox-Amo (titanium dioxide) for internal delustering of viscose and for preparation of external delustrants or dullers; Titanox A-No. 24 or Titanox AA for internal delustering of acetate; and Titanium Sulfate Cake for the preparation of titanous sulfate strippers.

TOBACCO CLOTH: Of the three basic cotton grey goods, printcloth is the best, followed by cheesecloth and tobacco cloth are the lowest in texture of any cotton materials made on a loom.

Narrow cheesecloth is under 36 inches wide; beyond this width the material is called wide cheesecloth. When the goods are 36 inches wide, they are called tobacco cloth. Constructions as to texture are square, 8 x 8 up to 48 x 48. Warp yarns are 28s; filling yarns, 30s to 40s.

General uses for tobacco and cheesecloths in the finished state are: backfilled gauze, bandages, bedspreads, buckram, crinoline, curtaining, dust cloths, flag bunting, flour bagging, fly linings and nets, gauze, hat lining, interlining, label and sign cloth, netting, play suiting, shading cloth for tobacco and other vegetable plants, tea bags, theatrical gauze, wrapping cloth for cheeses.

TONTINE: A du Pont trademark for pyroxylin-coated and impregnated washable window shades.

TOP GRAIN: Refers to grain-side or hair-side of cattlehide that has been reduced to a specified thickness on the ounce standard, the range being from 2 to 10 ounces according to a standard leather gauge. Split leather has to be so designated and is not included in the above classification. Split is that portion of a hide or skin after splitting, other than the grain or hair-side. Splits are usually named according to their sequence of production, such as main, second, slab (as in the case of upholstery leather), or the use to be made of the leather, such as flexible for innersoles and gloves, waxed for low price shoe uppers, etc. A third classification includes bag and case leather that is finished with pyroxylin or pigment.

TOW: A continuous, loose rope of rayon filaments drawn together without twist.

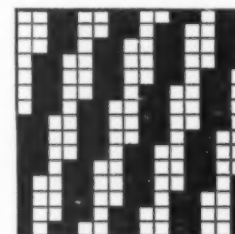
TOWELING: General name given to birdseye, crash, damask, glass, honeycomb, huck, huckaback, twill, Turkish or terry, fancy, novelty, and

guest towelings. Many of these cloths have colored or fancy borders; some of them may be union in fiber content. All towelings have property of good absorption.

TRACING CLOTH: A lightly coated transparent, stiff material with a gloss, used for blueprints.

TRANSPORTATION FABRIC: Upholstery fabric used for seats in railroad cars, buses, and other vehicles. May also include the curtains on Pullman cars but does not include head linings. It is a rugged fabric that must withstand much friction, abrasion, strain, etc.

TRAVELING BAG, SUITCASE, AND STRAP LEATHER: A general term used for leathers in the manufacture of the foregoing articles. It does not, however, cover light leathers used for women's fancy handbags. The basic material for bag and case leather at present is leather made from the hides



75° twill $\frac{8}{7}$
go up 4 picks
on each warp end

of animals of the bovine species, heavy sealskins, and goatskins.

TREBLE, TRIPLE CLOTH: Made with three sets each of warp and filling, this arrangement is used in making heavy fabrics, chiefly for industrial purposes; pile fabrics, however, are often constructed in this manner. Examples include conveyor belting, brake lining, woven belting, cotton harness fabric, some chinchilla, and special finish coating.

TUBING: Tubular cloth woven on a loom is used for sheeting, casing, bolsters, neckwear, etc. The fabric is woven one section on top of the other with the edges joined on the principle of tubular weaving, usually by dropping a warp end on one selvage. The cloth is cut in correct size to be made into the finished article. Tubing is not used very much in making pillow casing and bolsters since wide looms now take care of making the material.

TUBULAR FABRIC: Woven or knitted cloth made in seamless tubes, such as hosiery, knitted neckwear, pillow casing, mail bagging, webbing.

TUFTED FABRIC: A fabric decorated with fluffy tufts of soft twist, multiple ply cotton yarns. Some are loom-woven but the majority have the tufts inserted and cut by machine in a previously woven fabric, such as muslin sheeting, lightweight duck, etc. The tufts may be intermittently spaced giving the type called candlewick, or arranged closely in continuous lines giving the type called chenille. The patterns vary from simple line effects to elaborate designs. Used for bedspreads, robes, bath mats, stuffed toys, etc.

TURKISH TOWELING: The well-known terry cloth identified by the uncut pile effect on one or both sides. It has excellent absorptive powers and is used for beach wear, sandals, wash cloths, and towels. (See Terry.)

TWILLED TAPE: Rugged cotton narrow fabric or tape made with herringbone weave in a compact texture. Finds use in finishing garments, spindle banding, wrapping, etc.

TWINE: A ply yarn that is made from medium twist single yarn with the ply twist in the other direction. Binder twine is a single strand yarn that is 3 or 4 mm. in diameter and strong enough to give good service on a mechanical grain binder. Twine is made from abaca, henequin, sisal, etc.

(continued)

Industrial Textile Terms . . .

TWIST: The number of turns about its axis, per unit of length, noted in a fiber, yarn, cord, etc. It is expressed in turns per inch, turns per meter, or by the helix angle in a structure of known diameter. Twist can be controlled mechanically.

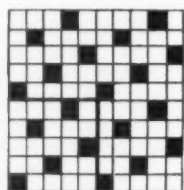
S-Twist is the direction of twist in yarn or cord comparable with the spiral portion of the letter S. It was formerly known as left or reverse twist. **Z-Twist** conforms with the spiral portion of the letter Z. It was known formerly as right twist. The term also implies the strong, firmly-twisted silk thread used by tailors.

TYPEWRITER RIBBON FABRIC: The highest constructed cotton fabric made today. Combed Egyptian, Pima, or Sea Island cotton is used, and the thread count ranges from 260 square to 350 square. Some imported British fabric has a texture of 400 square. Yarns range from 70s to 120s. Nylon and other man-made fibers are also used to make the fabric.

TYRE YARN: High quality cotton tire fabric yarn of 15/23s yarn count. Twist is Z-Z-S.

TYRON: Name given to high tenacity rayon yarn used for tires. Its strength and heat-resistance make it possible to produce tires which give longer mileage and conserve rubber. Product of Industrial Rayon Corporation.

UMBRELLA FABRIC: A high textured cloth used to cover umbrellas. Usually made with plain weave, but some of the fabric has a twill or satin construction; stripes and checks often appear in



5 end satin
counter of 2
filling effect

the cloth. The cotton fabric used may contain either carded or combed yarn; other cloth may be all nylon, all-rayon, silk and rayon, cotton and nylon, etc. At present there is a wide variance in the several types of umbrella fabric.

UMBRELLA SILK: A plain taffeta or twilled cloth made with a fancy selvage and used for umbrellas and parasols. Roman or other stripes are sometimes featured. Umbrella silk is made with cotton filling in the cheaper grades.

UMBRELLA TOP FABRIC: Originally a British export cotton fabric made of plain weave and characterized by a crammed-effect border. Now made, as well, from twill and warp-effect satin constructions. Fancy woven borders are seen in the material which is made from silk, rayon, acetate or nylon as well as cotton.

UNBLEACHED MATERIAL: Any cloth as it comes from the loom in the grey or loom state, before any wet or dry finishing operations.

UNBLEACHED MUSLIN: This term is applied to grey printcloths and to lightweight sheetings. It is also known as domestic.

UNION TANNAGE: A combination of hemlock with chestnut oak extract produces *union tannage* sole leather. The term, however, is also applicable to a combination of other vegetable tanning agents such as mangrove, myrabolans, and quebracho.

UPHOLSTERY: A material used on furniture and to cover walls, as curtains and hangings; also fabric coverings and treatments in automobiles, airplanes, and railroad passenger cars. The outstanding fabrics classed as upholstery include brocade, brocatelle, damask, cretonne, chintz, tapestry, Jacquard fabrics of special make, denim, linen, and fabrics of the new man-made fibers.

UPHOLSTERY DENIM: A rather loosely applied term given to upholstery materials that are seldom true denim. Coarse single ply, or novelty yarns are used in construction and the filling is low in texture or pick count. Cotton, nylon, or rayon warp is used while the filling is cotton. Made in dobby or Jacquard effects, the fabric is used to cover boudoir chairs, day beds, other furniture. See Furniture Denim.

UPHOLSTERY LEATHER: A general term for leathers used to cover cushions for furniture, carriages, and automobiles, and extended to cover the materials that go into the tops and sides of vehicles, when made of leather.

Limited quantities of furniture leather are made out of large coarse-grained goatskins. The staple material in this country, however, consists of cattlehides, split at least once and, in many instances, two or three times. The top or grain cuts go into the higher qualities and the splits into the low grades. The several cuts are usually designated as follows:

1. **Buffing:** This means a very light cut of the grain portion, about one-half, taken from the surface of cattlehides. While produced by upholstery tanners, it is not used for upholstery purposes but finds use in bookbinding, pocketbooks, etc.
2. **Top Grain, Full Grain, Full Top Grain:** The first cut taken from the hair-side of the hide from which only the hair and associated epidermis have been removed, and which is not suitable for upholstery. Scars, scratches, and other blemishes may be lightly buffed or remedied, but the total area so affected shall not exceed five percent of the total surface of the hide.
3. **Snuffed or Corrected Top Grain:** The same as Top Grain except that the surface of the hide may be lightly snuffed all over. Such snuffing removes only the top of the hair follicles.
4. **Hand Buff:** The same as Top Grain except that the surface of the hide has been shaved by hand or machine to remove shavings of slight thickness.
5. **Machine Buff:** That cut of the hide from which a buffing of approximately 1/64th of an inch (1 ounce) in thickness has been removed from the grain. This should leave a portion of the grain on approximately the entire hide.
6. **Special Machine Buff:** That cut of the hide from which a light cut of approximately 1/32nd of an inch (1 3/4 ounces) in thickness has been removed from the grain. Special Machine Buffs must have traces of the grain on the hide.
7. **Deep Buff:** The first cut under the Top Grain, Hand Buff, or Machine Buff.
8. **Split:** The first and subsequent cuts under the Deep Buff.

UREA: A soluble, colorless, crystalline substance found abundantly in the urine of mammals and in small amounts in bile, blood, liver, muscles, etc. It is formed by the oxidation of nitrogenous compounds in the body. Much urea is now made synthetically for the textile and plastics trades.

USTEX CONVEYOR BELTING: A rubber-fabric belt used for conveyor purposes which is 250 to 400 percent stronger than fabric formerly used. This development of the United States Rubber Company is a construction of nylon and Ustex yarns that increases permissible working tension of each ply two and one-half times and permits the use of more plies. Other advantages of the product include increased flexibility crosswise, low stretch lengthwise, and heavier belting, with excellent toughing qualities.

VEALS: A term used to designate a large calfskin, almost as large as a kip.

VEGETABLE FIBERS: Refers to all textile fibers of vegetable origin: cotton, flax, ramie, jute, hemp, abaca, henequin, istle, sisal, pineapple, etc.

VEGETABLE TANNAGE: A generic term indicating the process of tanning leather by the use of barks or extracts from plants and trees.

VELLUM CLOTH: Fine transparent linen or cotton fabric that is smoothly sized on one side so that it may be used for tracing designs.

VELON: A trade name used by the Firestone Tire and Rubber Co. for extruded plastic filaments used to weave into fabrics for automotive, aircraft, home, and upholstery purposes.

VELVET FINISH: See Suede Finish.

VERSALITE: This thermoplastic material of resin base is light in weight and very tough. The product can be made into practically any thickness above 0.20 inches, can have solid color throughout, with finishes varying from dull to gloss or embossed. Product of U.S. Rubber Co.

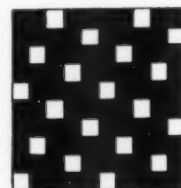
VICARA: Produced from protein by Virginia-Carolina Chemical Corporation, it is comparable in many ways to wool. Vicara is easy to spin, weave and dye, and it blends readily with other fibers such as cotton, nylon, rayon, and wool. It imparts a luxurious, cashmere-like appearance and a soft, comfortable hand. Properties include high absorptiveness, moth- and mildew-resistance, and non-shrinkage. Vicara in blends improves fabrics of many types for use in blankets, dresses, hosiery, knit goods, sport clothes, upholstery.

VINYL-BUTYRAL PLASTIC: Long used as interlayer material in safety glass, this product may now be used as a textile coating material for stain-proof tablecloths, furniture slip covers immune to ink, and draperies that can be wiped clean with a damp cloth.

Application may be carried out on existing coating machinery. The fabric treated is bonded with a super-thin, almost invisible vinyl-butylal which is reputed to cause no chipping or peeling under normal usage conditions. Repeated laundering may be given the treated articles, while pressing is done on the untreated side with a moderate iron. Product of Monsanto.

VINYL-LASTIC: An adhesive designed for bonding vinyl sheet stock and to produce excellent adhesion of vinyl to itself, leather, metal, wood, etc.

5 end satin
base of 3
warp effect



The bond used is not deteriorated by vinyl plasticizers; neither heat nor pressure is required for bonding. Made by Permaplastic Products.

VINYLITE: Registered trademark of the Carbide and Carbon Chemicals Corporation. It is a resin formulated from high molecular weight vinyl chloride acetate. Vinylite is abrasion-resistant, water-resistant, chemical-resistant, and resistant to heat and cold. Vinylite resin coatings are used to supplant rubber in many essential applications such as chemical-resistant clothing, food and water bags, hospital sheeting, raincoats, tarpaulins, tenting, upholstery.

VINYON: A non-cellulose man-made fiber. It is made from vinyl resin, which is derived from

natural gas (or coal), salt, water, and air. In the form of a dry powder, the vinyl resin is dispersed in acetone. It is then filtered and deaerated by allowing it to stand for two days. The spinning process is somewhat similar to that of other man-made fibers. After extrusion of the filament, which is twisted while wet, the yarn is stretched to about 140 per cent of its original length, and is permanently set in this form by immersion for several hours at 150 degrees Fahrenheit. It is then wound in skeins or on cones. As a result of this stretching process, the strength of vinyon yarn is tripled, and it has a degree of elasticity that compares favorably with silk and wool. This quality makes it suitable for hosiery. When wet, vinyon does not lose its strength.

This fiber is made in continuous filament and short staple. The short-staple form is mixed with cotton or wool for use in felt and for fabrics in which creases or folds must be retained.

Vinyon yarn is not affected by moths, mildew, or age; it does not support combustion, and can be softened only at a heat of about 290 degrees F. Vinyon is not affected by acids, alkalis, or almost any other chemical with the exceptions of acetone and carbon tetrachloride. With these properties, vinyon is ideal for acid- and alkali-resistant clothing, shower curtains, fireproof awnings, industrial filter fabrics, bathing suits, fishing tackle, electric insulation, waterproof clothing, protective pipe covering.

VINYON E: Made from a new vinylite resin compound, this yarn has considerable elastic properties. It possesses many characteristics of rubber and for some purposes is superior to it since the yarn has shown better resistance to sunlight, tropical heat, and humidity, and is not affected by body acids. Products now made from Vinyon E include elastic webbings, tapes, cords, girdles, brassieres, surgical dressings, suspenders, and supporters.

VINYON N: Basically different from other vinyl materials, it is produced from a white, powdery resin which results from the copolymerization of vinyl chloride and acrylonitrile. This resin is dissolved in acetone and is spun on equipment similar to that used to make acetate rayon. The natural color of the product is light gold and it may be dyed by regular commercial processes using a wide range of acetate and vat dyes.

The fabric will not mildew nor support bacteria, mold, or fungi. Electrical insulation properties are good, perspiration does not have any effect, and exposure tests show no indications of allergy reactions. Warm to the touch and with a hand similar to silk, the material may be used in bathing suits, dressgoods, filter fabric, foundation garments, rainwear, and sportswear.

VISCA: When a viscose solution is forced through a narrow slit instead of a small single hole in a spinneret, a lightweight but strong ribbon-like material is produced that resembles straw. It is called visca. These narrow strips are useful in making costume accessories and in the manufacture of upholstery and millinery.

VUELITE: An embossed cellulose acetate sheet for use in diffusing panels for fluorescent light fixtures. It is much lighter than glass, thereby decreasing the weight of fixtures. Vuelite burns slowly; the rate is 1.5 to 2.0 inches per minute in .060-inch thickness, and it is approved by Underwriters' Laboratories. Product of Monsanto.

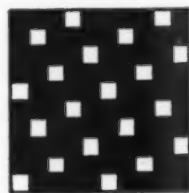
VUEPAK: Known for its rigidity and transparency, Vuepak cellulose sheets are used for packages and merchandise displays. The thicknesses are .003, .005, .0075, .010, .0125, .015 and .020 inches. Product of Monsanto Chemical Co.

VULCANIZATION: The method of imparting greater durability, hardness, and elasticity to latex (rub-

ber) by heat combined with sulphur.

WADDING: 1. A fabric made of wool fibers felted into a compact mass through the application of

5 end satin
base of 2
warp effect



heat, moisture, and pressure without weaving. It is used in laundry presses, padding machines, tailoring, and upholstery. 2. An extra set of filling threads which lie dormant, without interlacing, between the face and the back fabrics in double or treble cloth constructions. The yarn is usually heavy and bulky, with little twist, to add weight and bulk to material.

WAGON COVER DUCK: A double-filled flat duck which varies in width from 48 inches to 90 inches. Known as regular, heavy, or extra heavy, and based on a 29-inch width, the duck comes in weights of 8, 10, and 12 ounces per yard.

WALRUS: This belongs to the Aquatic Group of raw materials for the tanning industry and refers to the leather therefrom. The group which includes seal and the sea-lion, as well as the walrus, serve as the raw material to produce leather for buffing wheels, luggage and fancy leather goods.

True walrus hide is of such thickness that it must be split prior to its use for bag leather. It is rather difficult to differentiate between seal and walrus skins after tanning and splitting and the names are often used interchangeably. Walrus Grain is sometimes imitated on cattlehide, sheepskin, and goatskin, as well as splits from hides of other animals. The term *Walrus Grain* or *Walrus Leather* when used in the traveling bag industry is generally regarded by the trade as being a species of genuine sealskin leather on which a simulation of walrus grain has been embossed.

WASTE DUCK: A single flat duck known for its varying amount of waste fiber used in coarse filling yarn.

WATERPROOF PLASTIC WOVEN FABRIC: Saran or other filament fabric used in upholstery which is given special waterproofing treatment.

WAX FINISH, LEATHER: A method of finishing the heavier weights of upper leather on the flesh side by working wax into the substance. The leather is largely exported for manufacture of shoes used by peasants and miners.

WAXED CLOTH: Any fabric which has been made waterproof by the wax or paraffin method, such as oilcloth, floor covering material, etc.

WEATHER CLOTH: Canvas or tarpaulin used to combat bad weather conditions. Used on ships, baseball fields, in storm areas, etc.

WEBBING: Strong, rugged, closely woven cotton material used for belts and straps of many types. It is usually heavier than the so-called woven tapes since stronger and stouter yarns are used to make webbing. Elastic webbing is woven with rubber threads as part of the warp. Most webbing is made of cotton, but it can be made from any of the major fibers and in combinations of fibers.

WELTING LEATHER: This is a curried leather made soft but tough. It is used in welt shoes as the uniting material between the shoe upper, sole, and insole.

WHITE-BACK DUCK: The usual denim of indigo blue dyed warp and unbleached filling.

WIDE NUMBER DUCK: That which is more than 24 inches wide; ranges are from 26 to 144 inches. Numbers run from 1 to 12, and the higher the number, the harder the texture.

WIDE SHEETING: Bed sheeting that is from 72 to 108 inches in length and width.

WILLOW GRAIN: See Boarded Leathers.

WINDOW HOLLAND: Another name for window shade cloth.

WIPING CLOTH, INDUSTRIAL: Any of a group of absorbent fabrics that are cut to standard size or sizes and generally used to clean machines and parts of machines. Over-edging or hemming is applied to prevent raveling.

WOOD PULP: Raw material for viscose rayon and, to a growing extent, for acetate.

X-51: Trademark used initially by American Cyanamid Company for its acrylic fiber which is being developed in both staple and continuous filament forms. It is distinguished by great bulkiness, good color, and ease of dyeing.

YARN: A generic term for an assemblage of fibers or filaments, either natural or man-made, twisted together to form a continuous strand which can be used in weaving, knitting, braiding, or plaiting, or otherwise made into a textile material. Spun yarn is the product of the spinning frame characterized by a continuous, evenly distributed, coherent arrangement of any type of fibers of varying or similar staple length, the relative positions of which are maintained by the introduction of a definite lateral twist to produce strength or coherence imparted in the final operation.

Notable exception to the above would be the woolen-type yarn. Here the fibers are distributed at near right angles with relation to the continuous length of the yarn. An exception to even spinning would be the addition of noiled fibers to the base stock. Noils do not lend themselves to being properly drawn, in consequence a rough texture yarn, desirable for tweeds and shantungs, is produced.

To produce spun yarns, the raw stock must be put through preparatory machinery for even distribution and blending, after which there is the carding or combing to achieve parallel fiber distribution; then a group of attenuating or drawing machine operations follow, ending with the spinning. Yarn in production is called a lap, sliver, and roving, in that order, depending on the type of machine used. Yarns are definitely sized or numbered based on the number of standard yardage hanks contained in one pound.

Filament yarn is made from various continuous filaments, such as silk and man-made yarn — viscose, acetate, nylon, vinyon, etc.

YARN MEASURES, COTTON: 54 inches equal one thread, the circumference of the warp reel. 80 threads equal one lea. 1 lea equals 120 yards. 7 leas equal one hank or 840 yards, the standard yardage for a number 1s cotton yarn. 1 bundle equals 10 pounds.

Z: A designation for that direction of twist in yarn, the inclination of which corresponds to the central portion of the letter Z. See S.

ZEIN: Protein fiber made from corn meal. The fibers are obtained by extruding the zein solution through spinnerets into a coagulating bath while contacting the zein with a reactive aldehyde, such as formaldehyde, and subsequently subjecting the resultant fibers to elevated temperatures.

ZELAN: Du Pont registered trademark for its durable repellent finish. Fabrics treated with the finish shed rain, snow, and water, resist spots and stains, with the exception of grease, resist perspiration, wrinkle less easily.



THE CONSUMER

The millman, the converter, the apparel manufacturer, the retailer, the retail clerk . . . all constantly use textile words and phrases as selling blandishment . . . all assuming that Mrs. Consumer knows what they're talking about. Sadly enough, a good deal of it is incomprehensible to her. And so writer Cora Carlyle gathers a

Q. Our Women's Club had a speaker recently on the subject of textiles and general care of clothing. She mentioned a finish known as *Aquex* and was able to tell about its general qualities for fabric improvement, but she did not mention specific fabrics or fabric types to which it could be applied. Can this finish be applied at home?

A. Aquex is a chemical finish applied by the manufacturer of the fabric, in the finishing plant. It cannot be applied at home because plant equipment is necessary. Its application is to rayons, and the following points may be informative to you:

The fabric is stabilized; that is, shrinkage is under two percent.

The cloth will resist sagging and will stretch no more after the treatment.

Fabrics are washable and considerable crease-resistance is obtained or retained.

The hand of the material remains soft and supple.

Q. The first time I washed my chenille bedspread, I was disturbed by the large amount of lint left in the washing machine, and even more in the tumble dryer. I am about to wash it a second time. Is there any way to keep the fabric from shedding this lint?

A. The nature and construction of the chenille spread is such that the long, fluffy fibers are held only by their being passed through spaces of the plain weave background cloth. The spread is bound to lose some fiber stock during laundering. The better quality spread has a tighter, more compact weave in the background fabric which cuts down the amount of lint working free.

To remove soil or dirt as quickly and easily as possible, a pre-soaking in lukewarm water with a synthetic detergent in it is suggested. Considerable portions of dirt and other matter will be loosened. Then lift the spread while it is soaking wet into the machine. Give it a very short wash, three or four minutes, and one short rinsing. Keep the spread in the tumble or spin drier at lowest speed and the shortest time possible. Watch the action closely and remove the spread as soon as you see that the fluffy pile will stand up, even though damp. Hang without folding to complete the drying, shaking the spread occasionally.

The same directions can also be followed for chenille housecoats, beach coats, bathroom rugs, etc. In the case of apparel, place on a garment hanger to dry. Of course, no chenille article should be ironed, wrung out, or twisted in order to prevent deep wrinkles in the ground fabric and the chenille itself.

Q. My husband bought an all-Dacron shirt but finds it uncomfortable because it does not give with movements. What causes this?

A. Dacron is not as flexible as some of the other major fibers, but this lack of utmost flexibility is compensated for by altering the garment patterns; slightly larger armholes, for example, and more room between the shoulders. With these and other changes, as the manufacturers become more used to handling Dacron,

it is believed that men will accept the fabric and appreciate its outstanding ability to resist wrinkles and stains, and to retain its shape and crease.

Q. I have been reading about the so-called *flexible foot* in men's nylon socks. Please enlighten me on this item.

A. There is a special process applied to the yarn in the best of men's nylon socks, so that the article expands or becomes flexible within reasonable limits. The small sizes will fit the usual 9½ to 10½; mediums, from 11 to 11½; large, from 12 to 13. Socks of this type are very desirable in construction since they afford comfort and fit hitherto unknown. There is enough flexibility so that variation in foot dimensions of width, toe formation, heel bulge, and so on can be accommodated.

Q. To settle a discussion in our Home Economics Class, is it possible for you to let me know the most popular blended fabrics on the market at the present time? I do not mean particular cloths, but only the fiber combinations.

A. The general consensus seems to imply that Orlon-wool, Dacron-wool, and acetate-Orlon-rayon are leaders. As time goes on and fiber production of the man-mades increases, it is likely that there may be some changes. This is being closely followed in the textile and apparel trades since it is taking on considerable momentum and will, in large measure, have much to do with the ever-changing trends in the textile industry.

Q. I bought a dress of 50% Orlon and 50% cotton, and although I have read that fabrics of Orlon do not shrink, this dress shrank somewhat and lost shape. Can you explain this?

A. You must bear in mind that the garment is only partly of Orlon, and this content helped lessen the shrinkage; it was the cotton content that caused the shrinkage. This is one of the key points to be emphasized about blended fabrics. Do not expect the best qualities of the fibers in the blend, whatever the blend may be, to apply to the whole fabric. In the case you mention, the shrinkage would have been greater without the presence of Orlon. And, once more, be sure to read labels carefully concerning laundering or dry-cleaning.

Q. I have a dynel fleece coat which fills its requirements for me very nicely. But how should I clean the coat, now that it needs cleaning? The store where I purchased the coat said that it was washable, but I can't help but feel a little skeptical about this. Should the coat go to a laundry, or to a dry cleaner?

A. These coats are comparatively new on the market, and it is suggested that dry cleaning is the safest procedure. Tell your dry cleaner just what the fiber content is, and if he does not know the exact procedure to follow (this is very important because the fluffiness of the nap cannot be restored at present), he should write to the National Institute of Dry Cleaning, 101 West 31st St., New York City.

R WANTS TO KNOW...

group of typical Mrs. Consumers before each issue goes to press . . . asks them what they'd like clarified in textile terms . . . and puts the questions to Dr. George Linton, Textile Editor. Here is the latest group, and the answers may provide illuminating information for the benefit of many readers.



Q. I have been using my steam iron with great success on woollens. I would, however, like to know if using the iron on cottons necessitates sprinkling them first? And what about new fibers that may be contained in the material?

A. It is not necessary to sprinkle cotton, linen, silk, rayon, or woolen fabrics. This is one of the great advantages in the use of the steam iron; you can use it on any of these fabrics without any prior preparation, though it is desirable, with heavy cotton or linen articles, that they should not be too dry before ironing.

If the fabric contains one of the new fibers, use caution in the application of heat (dry or steam) because the fibers may be affected. If there is no tag attached to give you the definite information, try your iron first on an inconspicuous portion of the article or garment.

Q. When making anything of felt, for the house or for apparel, how should I finish the raw edges of seams?

A. The best way is to use pinking shears when cutting your garment. Of course, you never turn in felt at the hem or elsewhere, as this would make for too great bulk. This also applies when making draperies, pillow covers, table covers, and so on. You do not have to bind the edge at all; and the pinked edge of the one turn will be sufficient.

Q. Why are the names of some fibers, when mentioned in ads, followed by an R inside a circle, thus — ®? Also, the fabric names are capitalized in some instances, and words like rayon, acetate, and nylon are not capitalized.

A. The symbol ® means that the name has been registered in the United States Patent Office, and as such is always capitalized. Words like nylon, acetate, and rayon have not been patented and are classed as generic or general terms.

Q. Some time ago you gave a clear description of the use of a metal spray applied on lining fabrics, showing that this acted as an insulation for heat or cold. Is it true that the same spray can now be used on outer fabrics?

A. Yes. The process is used directly on the back of the outerwear fabric, such as gabardine, blends of rayon and nylon, acetate and rayon, etc. These fabrics are used for stormwear, ski suits, and sport jackets of several types. Sometimes a water repellent is used in connection with the weather insulation properties.

Q. I live in a small town in the Middle West and find it difficult to get mothproofing done in this area by any reputable commercial service. Is there any merit to the spray-on type or to the products sold for application in the washing machine?

A. We know that the National Institute of Dry Cleaning has conducted surveys and tests on many of the available methods. None examined within the last four or five years offer absolute

permanency. Some of the methods claim permanency after dry cleaning, but none include claims for wet cleaning. We might add that the word *permanency* should not be used in this connection. The word used should be *durable*, which is the term accepted by the Federal Trade Commission in descriptions of this sort.

Q. Will you kindly provide me with a list of the five most important qualities imparted to fabrics? I am writing a paper in Marketing of Textiles and would like to use this information as a basis for obtaining further information along specific lines.

A. In order of relative importance, these finishes may be listed as follows: 1. Improvement of handle or feel of the goods. 2. Durability. 3. Dry cleanability. 4. Elimination of odor. 5. Drapability. Incidentally, there are over 250 brand-name finishes that can be applied to cottons and viscose rayons alone.

Q. Your sewing hints are much appreciated by me since I sew for my daughters and myself. I try to use the best quality fabrics, and I study all those shown in American Fabrics, a bible in our house. My question now is: Should I use interfacing when a material is firm in its own right?

A. Use it, by all means. A good hair canvas is light, flexible, and easy to work with. It should be put in across the shoulders, in collar and lapels, along front facings, inside patch pockets, and in belts. The pattern you use may give you other suggestions, but remember, in making tailored garments, that a man's tailor always uses canvas interlining to help keep garments in shape through stress of wear and cleaning.

Q. I am slender and can wear sheath skirts, but even though I use the best available fabrics, there invariably develops a stretch where I sit; the dressmaking writers call it a cup. Is there any way to prevent this?

A. This can be prevented by cutting a taffeta panel from the back pattern, tapering it to nothing at the waistline and cutting it ten inches shorter than the skirt itself. Ease this panel into the side seams about one-half inch narrower than the outside material. The taffeta will not stretch, and will help to keep the skirt from stretching.

Q. In a previous issue on the Consumer Page, you explained that gauge in full-fashioned stockings denoted the number of crosswise loops per inch and one-half. I have noticed in recent ads that 66-gauge hosiery is on the market. Does the definition of gauge apply here? It does not seem possible to me that all these loops can be crowded into 1½ inches.

A. The definition still holds; but, of course, as the gauge becomes higher, the yarn must become finer. This means that you must handle such delicate hose with utmost care. Actually, its resistance to abrasion or rubbing is remarkable. Snags are the chief enemy to long life of hosiery.

letters to the editor

TIMELY SUGGESTIONS FOR A.F.

TO THE EDITORS:

We want to take this opportunity to congratulate you for the fine editing and appearance of your publication that makes it one of the most beautiful samples of the American periodical press.

We also take the liberty of suggesting to you a series of articles on the future of textiles and their aspect in international trade under the light of the recent reports of various international agencies on the subject. An article on new designs for woollens in men's wear would also, in our estimation, prove to be an interesting and timely feature. We thank you for your consideration and are looking forward to more issues of AMERICAN FABRICS.

Moltex Tejidos
Caracas, Venezuela

COMMENT ON A.F. 25

TO THE EDITORS:

May I acknowledge most cordially the latest superb copy of AMERICAN FABRICS. I always look forward to the publication which is one of the most beautiful I have ever seen.

G. H. Edgell, Director
Museum of Fine Arts
Boston, Mass.

AMERICAN FABRICS brings you advance news of what's coming up in the fashion-fabrics fields.

ON 60-GAUGE HOSIERY

TO THE EDITORS:

In *The Consumer Wants to Know* section of the Winter 1952-53 issue of AMERICAN FABRICS you say, "The 60-gauge (hosiery) has a more delicate thread than a 51-gauge . . .," and then suggest that 51-gauge hosiery be worn in preference to 60-gauge for daytime wear.

I think you will find that gauge describes the number of stitches per inch and a half in hosiery and not the weight of the yarn. Due to greater snag resistance and elasticity created by the higher number of stitches used, sixty gauge stockings made of fifteen denier yarn should wear better than fifty-one gauge made of the same size yarn. I was greatly interested in this question since it is one which we people who interpret for consumers are asked a great many times, and one in which consumers are frequently misled.

Mary Ellen Roach
Instructor in Textiles
University of Connecticut
Storrs, Conn.

SWATCHING IN AMERICAN FABRICS

TO THE EDITORS:

Every edition of your AMERICAN FABRICS, full of brand new textile information, enriches my knowledge, rejoicing my eyes and brightening my heart.

Your AMERICAN FABRICS is unique and predominant among similar textile magazines in the world, because of its top-level editorship, highly artistic technique in layout, accurate and clear explanatory notes, elegant illustrations, and, especially, plentiful and beautiful reference samples collected systematically. Every turn of page is full of inspiration.

It has, however, a trifling defect which has made me feel regretful since my first reading of the magazine. This is in the manner in which some of the samples are pasted on the pages, sometimes so irregularly and unsolidly that they suffer from rolling up and even falling off in frequent turning of the pages . . .

Tomizo Yoshikawa
Kureha Spinning Co., Ltd.
Osaka, Japan

Editors' Note: The method of mounting the swatches in AMERICAN FABRICS has been designed to allow the reader freely and easily to lift and feel the material in each case. See picture below.



Each issue of AMERICAN FABRICS brings you knowledge and information based on authenticity.

CREDIT FOR N. C. STATE COLLEGE

TO THE EDITORS:

We have read with interest the article on the *Textile Mill of To-*

morrow in your Spring issue. This project was executed at the North Carolina State College, School of Design, under the direction of Mr. Richard Buckminster Fuller in January 1952 when Mr. Fuller was a visiting lecturer at this College . . .

Henry L. Kamphoefner, Dean
North Carolina State College
Raleigh, N. C.

MORE ON P.A. PROBLEMS

TO THE EDITORS:

I want to take this opportunity to compliment you on the latest issue of AMERICAN FABRICS and AMERICAN INDUSTRIAL TEXTILES. As the purchasing agent of a large fleet of transport carriers, we do have a definite interest in textiles.

While I was interested to read the feature with regard to automotive fabrics, one of our chief interests lies in the direction of uniform work clothing for our carrier staff. This has been a constant source of difficulty and expense to us inasmuch as all of this clothing is supplied by us, and a good deal of replacement is necessary.

I am primarily concerned with the serviceability of certain work-clothing textiles which will not only have a good appearance but will be able to stand the long wear, abuse, dry cleanings, and washings which are so necessary in order to keep our staff well equipped.

If there is any help you can give us on this subject, we shall be very grateful to you.

J. C. Connelly
Boston, Mass.

To increase volume and maintain profits, each issue of AMERICAN FABRICS brings you valuable, authentic, and needed information.

ROMANCE OF INDUSTRIAL TEXTILES

TO THE EDITORS:

The garment industry is so vast and well established in this country that the weaving of industrial textiles, which is a much newer branch of the industry, has never received the public acknowledgment its achievements justify. As a student I do not have any adequate source for reference on this.

Apart from the automobile industry, which you selected to illustrate one phase of the new industrial textiles, there are others equally remarkable. Take the fantastic growth of the use of glass fibers, woven and unwoven, which are daily penetrating into new end uses.

I hope you will be able to cover this and some of the other modern

stories which have all the romance of the great achievements in engineering of a hundred years ago.

A. Chervin
Bayside, L. I.

FABRICS AND WALLPAPER

TO THE EDITORS:

. . . Although not specifically connected with fabrics I find the magazine very stimulating and of assistance in my work and I am very proud of my complete file of all copies. May I also offer my congratulations on your new packaging as I believe it will give better protection than the carton previously used.

Have you ever considered an article illustrating the similarities as well as the differences in the designing of fabrics and wallpapers? In the event you might consider such, may I extend an invitation to you to avail yourselves of any help we could give you in any way.

Addison H. Hathaway
Thomas Straham Co.
Chelsea, Mass.

New developments and uses of fabrics in industrial fields are covered in every issue of AMERICAN FABRICS.

FROM AN AUSTRALIAN DESIGNER

TO THE EDITORS:

As you will note by your records, I am fortunate to be one of your earliest subscribers and as the years have rolled by I have become one of your most enthusiastic admirers.

Our firm, trading as *Forward Fashions*, of which I am the designer and colorist, is widely known throughout Australia for our high quality coats and suits made from the finest quality Australian, English, and French woollen fabrics. We keep contact with these markets.

Apart from your excellent information coming to me via your four magazines a year, I have no personal contact with any of your high-grade mills, due to the fact of our currency restrictions. It is my most earnest desire to contact mills in America so as to be kept abreast of their particular fabrics.

Could I encroach upon your generosity so far that my name might be added to the mailing list of American mills, thus being able to receive their catalogs each season, and learn of latest developments.

Braham Goldbloom
31, The Boulevard
Melbourne, Australia

The Use of Fibers and Fabrics in Commercial Laundry Operations

*The importance of the fibers and fabrics used in
achieving the most economical operation of
commercial laundry plants.*

COMMERCIAL LAUNDRIES CAME into prominence in the early part of this century when home-owners got away from doing their own laundries and took advantage of the service offered by outside firms.

With the arrival of the automatic washing machine, the laundries lost a good portion of their business, but they have replaced this segment of their intake with larger operations with linen services, hotels and other institutions. Today there are approximately 7,000 commercial laundries in this country.

Old Washing Methods

The old method of handling individual bundles meant loading each bundle into a separate compartment within the washwheel. This proved inefficient as there was no set weight of laundry handled per wash. It would vary depending on the amount of wash coming in that week, and other factors. This made for very poor control in the use of chemicals and there could be no standard *recipe* set up to insure a continuous standard of operation. About 20 years ago, washwheels were developed without individual compartments or pockets to eliminate this fault.

Each individual bundle was now placed in a net made of cotton and thrown into the washwheel. Now the weight of each load could be controlled, space was saved, and the whole operation became more efficient. Thus a set formula of washing powders and chemicals could be put in a wash, determined by the actual weight of the load.

At the end of World War II, an important new fiber was introduced to the laundry industry — nylon.

A manufacturer of laundry nets bought a surplus supply of Army mosquito netting made of nylon. He manufactured nets from this surplus material and proceeded to sell them at a cheaper price than the existing cotton ones. These nylon nets produced immediate advantages to the commercial laundry. For

instance, they absorbed far less moisture than cotton nets. A wet or dry 24 x 36 size nylon net weighs less than 5 ounces. A similar size cotton net weighs a minimum of one pound when dry and an excess of two pounds when wet. An average load in a 42 x 82 washwheel is approximately 300 pounds, consisting of about 42 cotton nets with an average wash load of 250 pounds plus the nets, which in their damp stage weigh a total of 63 pounds. By utilizing nylon nets this wash load can be increased 20%, or 50 pounds, in a washwheel of this size.

The American Institute of Laundering determined several years ago that the washing operation cost is two cents a pound. By adding the cost of washing, multiplied by the number of washings a cotton net will render, to the original cost of the cotton net, the actual operating cost of a cotton net is obtained. If this cost is compared to that of a nylon net, it will be seen that the nylon ones are more efficient and cost less in operation. In other words, it was found that laundries were wasting space and supplies, and increasing service costs by using cotton nets. The laundries were actually spending money to wash and rewash these nets.

There are other advantages to nylon nets. A wet net made of nylon offers a slippery surface and, therefore, handling time is lessened and efficiency increased. When cotton nets were emptied, it was found that articles such as handkerchiefs would stick to the inside surface of these cotton nets, thereby causing lost articles for the consumer. It was further found that more laundry would fit into a nylon net than a cotton net of the same size.

Although the initial cost of nylon nets is higher, the length of service is 3 to 4 times longer than that of cotton ones. These basic facts and the data developed caused a new application of nylon to be developed — nylon laundry nets.

An all-nylon laundry net fabric by
ROBBINS MILLS. Laundry bags of
this fabric are manufactured
by GIBRALTAR FABRICS

More Fabrics on Industry's Want List

Since our first Industrial Issue, further material has been received showing that purchasing agents everywhere are continually alert to new opportunities in their search for improved fabrics to incorporate in manufactured goods. Below is given a further selection of pointers received from manufacturers engaged in fields where textiles play an important or decisive role . . .

From a large midwestern company that manufactures seating equipment:

"A durable fabric having the sanitary, washable properties of vinyl-coated fabrics and the softness, suppleness, and permeability of a woven fabric."

From a company manufacturing structural panels:

"A synthetic fiber mat or cloth which would have improved strength properties, better wetting qualities, and, naturally, be lower in cost."

From a prominent shoe manufacturer:

"We need a better wearing shoe lining."

From an aircraft manufacturer:

"Improved materials, lightweight, fire-resistant, tear-resistant, elastic, and stable under varying changes of temperature and moisture, not only for trim, but for coverings for engines, wings, etc."

From a manufacturer of infants' shoes:

"Fabrics with a dainty surface texture, yet heavy enough to use for infants' shoes — backed or unbacked — are very difficult to find."

From a carrier manufacturer:

"A cotton or other type of duck, that can withstand prolonged heat and can be reused."

From an aircraft engineering corporation:

"We would like to see vinyon which is uniform in texture and has fast-dyeing properties."

From an automobile manufacturer:

"The textiles that I would like to see developed to serve our best needs are those made of Orlon."

From a furniture manufacturer:

"Would like to see the mills weave their loose-textured fabrics with more picks so that they will wear better and tailor better."

From a manufacturer of roofing material for convertibles:

"Fabric that will weather for at least two or three years, and be piece-dyed in colors that will be fast for approximately one thousand hours."

From a large shoe manufacturer:

"We are looking for a strong cotton shantung weave with bright finish for uppers. Rayon is not satisfactory; it is too weak when wet."

From a manufacturer of sports footwear:

"A nylon or other synthetic fabric created especially for the shoe industry, incorporating the required toughness with good design."

From a manufacturer of stuffed toys:

"A flame-resistant chenille."

From a luggage manufacturer:

"A fast color material which would have the appearance of rayon taffeta, but would be washable so that spots could be removed without changing its appearance, and which could be glued in the

same way as rayon or cotton cloth."

From a purchasing agent:

"A single material with the heat-resistance of glass, the flexibility and cost of rayon, and the abrasion-resistance of cotton. This would be Utopia."

From another furniture manufacturer:

"More interesting upholstery weaves, such as tweeds and textures from spun plastic, Dacron, Orlon, etc."

From a major automobile manufacturer:

"Within the last two years the rapid development of fabrics made of man-made fibers has both complicated and eased our problem. We are watching the continued development of these fabrics with a great deal of interest."

From a large optical company:

"We are looking for textiles suitable for linings and covering display cases and spectacle cases."

From a silverware manufacturer:

"We are always interested in new materials to show off our silverware products to advantage."

From a box manufacturer serving the jewelry and cosmetic fields:

"More novelty fabrics, particularly along the lines of new brocades that have been developed recently. Also fabrics more along the lines of the fancy silks and satins now manufactured in France and Italy."



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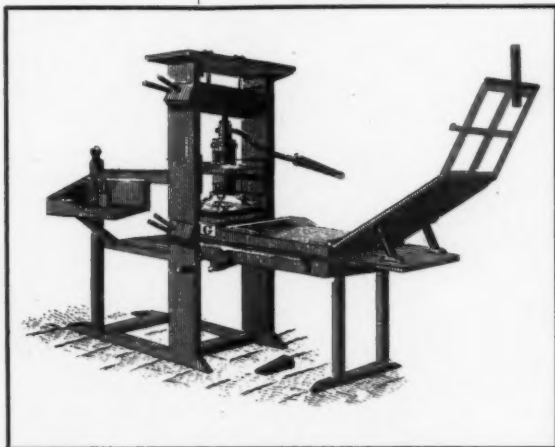


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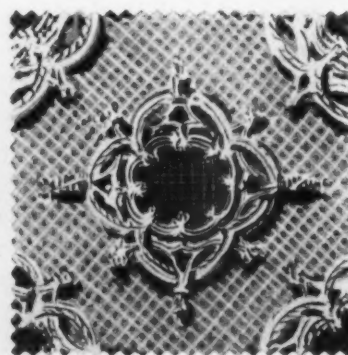
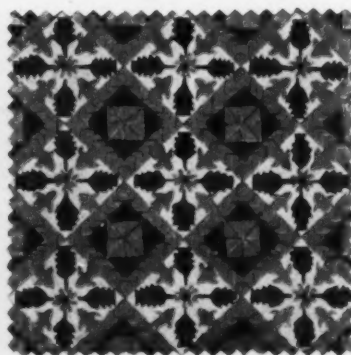
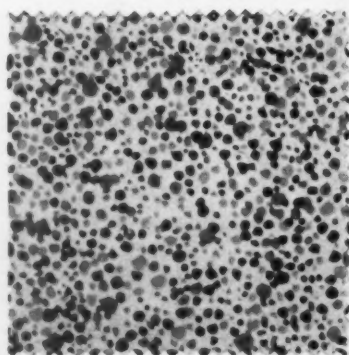
Country Fair—colorful, imaginative print based upon emblems seen at most Portuguese Peasant Fairs, principally at Barcelos. 36" "Everglaze" chintz.

Left to right:

Ovar—named for Portuguese Western Province where stylized flower and spatter designs painted on oxen yokes are the theme for this colorfully simple 36" "Everglaze" chintz print.

Sintra—This "Everglaze" chintz 36" print finds its basis from a 16th century Moorish tile found in a villa in Sintra, famous watering place near Lisbon.

San Geronimo—a typical architectural "Manueline Gothic" motif worked in stone at Monastery of San Geronimo inspired this dignified 36" "Everglaze" chintz.





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